NORTHROP NEWS

NORTRONICS

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NORTHROP NEWS

NORTHROP NORTRONICS

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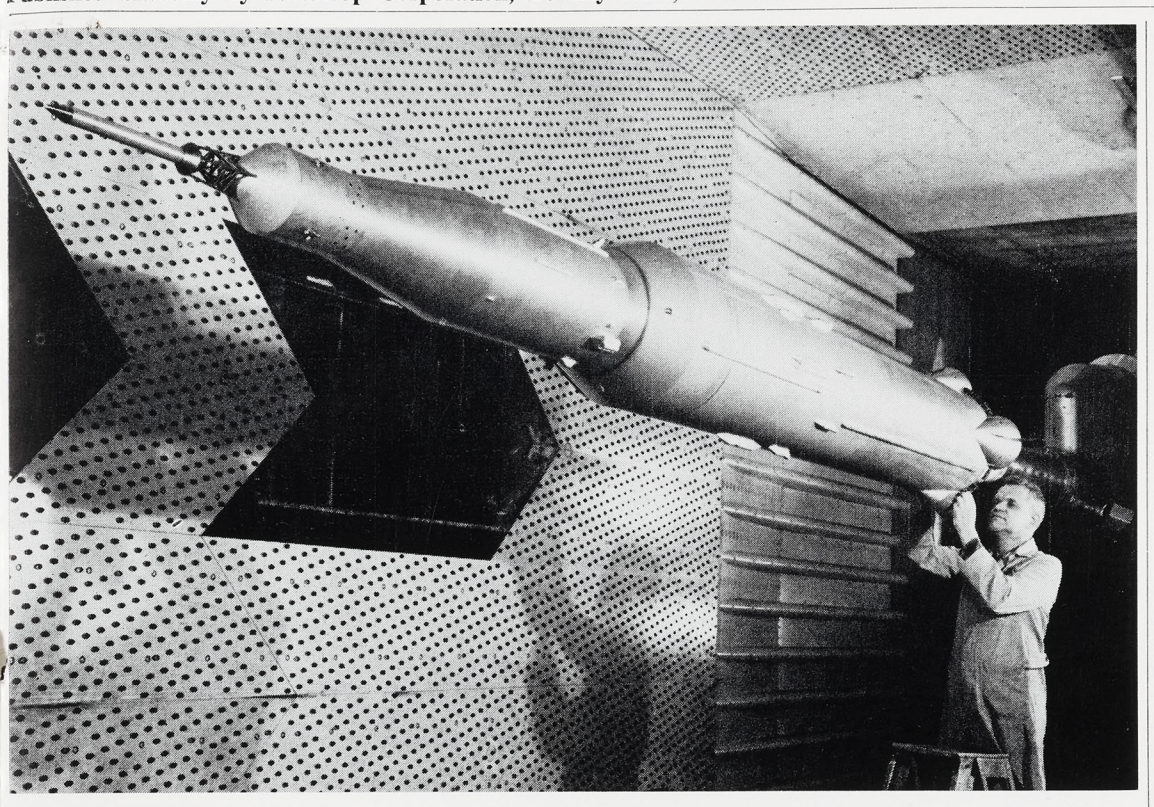


THE APOLLO-SATURN — This is a scale model of the Apollo-Saturn V launch vehicle, as designed and tested by engineers at the Nortronics Huntsville Aero-Thermodynamics branch. The test was conducted in a wind tunnel, to determine stability data and pressure distributions on the aft portion of the vehicle. Work was done for the National Aeronautics and Space Administration's Marshall Space Center. The model was identical to the vehicle launched in November from Cape Kennedy.

Cost Control Program Successful on C-5A

The Nortronics Navigation department is recording substantial success in its cost control plan for the C-5 Inertial Doppler Navigation Equipment (IDNE) program.

Summing up the progress to date achieved in many areas, Ross Miller, vice president and manager of the Navigation department, pointed to the need for increased effort to attain production targets.

"Our C-5 program is well on its way to becoming a technical success," Mr. Miller said. "Engineering has performed competently. Materiel continues to do a superb job in reducing the costs of purchases. However, we still have a tough, competitive task ahead—to make each production dollar do the work of several.

"We are looking for every member of the C-5 team—up and down the line—to contribute the energy, the enthusiasm, and the ingenuity to meet our production cost goals."

Last April, Navigation department management launched a concerted effort to trim costs on the C-5 program. Called the Target Cost Program, the plan was to reduce the cost of each item of deliverable equipment.

"Since more than 50 percent of the C-5 direct dollar outlay is for materiel, we knew we had to move into the field which promised the biggest reduction," George Chalmers, director of Administration and Control, said.

"The idea was to work closely with component suppliers to determine where potential savings existed, and specifically what actions on our part would enable the supplier to reduce his original price," Bror Dahlberg, supervisor of Materiel Estimating, said.

The attack on costs was designed to move on five fronts. First, components were grouped by their commodity type. For example, all semiconductor requirements were pooled and assigned to one buyer. Lower prices were made possible through quantity ordering.

At the same time, the specifications for hundreds of items were screened by Engineering for ways that the supplier could produce the component at a lower cost without compromising product quality. In addition, a widespread search was conducted to develop new sources for special items. This new competition among suppliers brought about a reduction in prices.

Buyers received target prices for all components within their commodity assignments. They then entered into direct negotiation with suppliers to meet or better these targets.

Meanwhile, producibility engineering teams zeroed in on ways of reducing the number of components for each item of navigation equipment and for new methods for lowering fabrication and assembly costs.

To date, 83 per cent of targets have been met or exceeded. According to Dave Jenkins, chief of Purchasing:

"The second phase of the cost reduction program is directed at the large dollar value of material that is still uncommitted."

George Fritzel, director of Manufacturing and Material, summed up the production phase of the C-5 cost reduction program:

"Once we had gained the best buys on components and parts, we had to protect our savings by assuring that the equipment was assembled at top speed while still preserving quality. In effect, we have had to rethink our entire assembly operation."

To get this speed and accuracy, subassembly testing equipment has been moved from a separate test area and placed directly in the assembly line. This enables a

(See COST CONTROL, page 6)

Recreation Clubs Schedule Two Installation Dinners

Northrop Nortronics will stage two Installation/Recognition ceremonies Saturday to herald the ending of one year and the beginning of another for Northrop Recreation Clubs.

Recognition will be paid the officers and NRC Council members who served voluntarily over the past year and at the same time new officers for 1968 will be installed.

Nortronics Anaheim NRC leaders will gather in the New Orleans Room, Anaheim Stadium Club Restaurant, along with management representatives and special guests.

Bill Kieffer, president, heads a new list of officers to be installed. Included are Vito DePaul, vice president; Maxine Hopper, secretary; Norma Hoag, treasurer; and Roy Steinestel, sergeant-at-arms.

Nortronics Hawthorne - Palos Verdes NRC Council members will join with Norair NRC counterparts at the Proud Bird Restaurant at the Los Angeles International Airport.

Dick Paramore, president; Joe Kalina, vice president; Paula Gardner, secretary; Bill McNair, sergeant-at-arms; and Kevin McAloon, treasurer, are the new officers to be installed.

Blood Bank Drive Set for January 31

Another Red Cross blood donor day is being arranged by the NRC Personnel Activities office at Nortronics Anaheim. The date is Wednesday, January 31, in the Y-12 training classroom. The six-bed donor station will be open from noon until 4:30 p.m., striving toward a goal of 200 pints.

Organization clerks have sign-up cards and can arrange for employee appointments.

Donations may be credited to the Anaheim NRC group account and to one's personal account.

Club Members Hold 'On-the-Air' Meetings

Members of the Northrop NRC Radio Club "meet" every Monday night without even leaving their homes.

At 6:30 p.m., they tune to the 3935 KHZ frequency and conduct club business, as well as discuss radio, in general.

Commissioner Bill Anderson said the club's base station, W6VPZ, is the net, or base, for the weekly conversation.

Both AM and single sideband equipment is used. Conversation is open to all amateur radio operators at Northrop, Mr. Anderson said. The unique "meetings" have been taking place since November.

Further information may be obtained by contacting Mr. Anderson on Norair ext. 1933.

INSPECTION VISIT

Captain Tours Anaheim

In another appearance of high-ranking U.S. Naval officers at Northrop, Captain Richards T. Miller made an inspection in December of the Nortronics Anaheim facilities as guest of Frank Lynch, Nortronics Anaheim manager, who conducted the personal tour.

The visit of Captain Miller, who commands the Engineering and Design Department in the Naval Ship Engineering Center at Washington, D.C., follows by six months a similar inspection trip made by Rear Admiral R. B. Fulton, who heads the Center.

During the tour, Mr. Lynch spoke with Captain Miller emphasizing Northrop's readiness to support Navy plans for extensions of existing automatic testing techniques.

Nortronics Anaheim is presently producing Test Evaluation and Monitoring System (TEAMS) sets for use aboard all 26 ships in the new DE 1052 (4100 ton) class of escort vessels. To date, nine of these 26 TEAMS sets have been delivered to the Navy on or ahead of schedule.

THE CAPTAIN CHECKS HIS TEAMS— U. S. Navy Captain Richards T. Miller gets a first-hand report on the progress of the Test Evaluation and Monitoring System (TEAMS) nearing completion by Nortronics for the Navy, from Frank Lynch, Anaheim manager. Assisting Mr. Lynch in conducting the personal tour were Jim Norman (center), Automation Systems Marketing chief, and Bill Patterson, senior applications engineer.

Stout 'Holds the Line' At Coliseum Events

From metal-to-metal bonding to shoulder-to-shoulder blocking —that's the transition Norair's Bill Stout has made every football weekend for the past 25 years.

Mr. Stout is an automatic machine dispatcher in Manufacturing Control, but he doesn't pull on shoulder pads and play football in his spare time; he watches it.

Crowd Control

That is, after he has made sure that up to 95,000 others are sitting where they can watch it. Bill handles crowd control for the Sunday afternoon Rams games at Los Angeles Coliseum, supervising as many as 80 to 100 others; most of whom are Northrop employees who have worked for him as long as they can remember.

Seeing all the home games is a fringe benefit of a preoccupation that has kept Mr. Stout busy on weekends since he first ushered USC games at the Coliseum in 1927. During these past 40 years, Bill has seated crowds for every event from rodeos and circuses, to political gatherings and football games.

But, his fondest recollection is of the 1932 Olympic Games played in Los Angeles. "Every event was thrilling," said Bill, "I just couldn't take my eyes off that field." Since then, the job has been among his first loves—and an absolutely no-cost way to see sports. He even gets paid for it.

Last-Minute Rush

Bill and his staff, mostly Northrop employees from Hawthorne and Palos Verdes, are proud of the fact that they have seated 75,000 fans in the last 30 minutes before kick-off. " 'Course we don't look forward to doing that all the time," he quickly noted, "but, it can be done."

When you think about it, it's no wonder Bill Stout is good dispatching fans through stadium tunnels. He's been at the Coliseum almost as long as football has, having missed only two games in 22 years. No Rams player or coach can top that.

A Fine Job

Two of Bill's long-time staff of Northrop ushers, Carl Lippon of Hawthorne, and Russ Gimbrone in Palos Verdes, verify his proficiency at "holding down the south side." Carl: "I've always been amazed at how cool Bill remains when some irate fans complain about their seating. He always seems to be able to smooth things out." Russ: "He has certainly done a fine job all these years; it's about time Bill is being recognized."

With another successful Rams season closed, Bill will seek out other crowds to conquer. But he wouldn't like that word, "conquer." "I've always told my men to, above all, be polite and courteous to the folks who've put out good money to see the games . . . and we generally are," he reckoned.

Rose Bowl, Too

Bill has "worked" almost all Southland arenas at one time or another, including Riverside's Grand Prix and the Rose Bowl. He and his Northrop crews have seated many celebrities who have bought a reserved seat; including Bob Hope, Richard Nixon, and Robert Kennedy.

But his biggest job came about 15 years ago when the Coliseum still held 105,000. "Notre Dame was playing USC and we put somebody in every single seat," recalled Bill. "I stood up the whole game, and I'll never forget it. But, don't ask me who won, I'd have to think back on that."

TWENTY-FIVE YEARS OF SERVICE to Northrop is the record of achievement of Bill Stout. On weekends, Bill handles audience control for the Rams football games at the Coliseum. Weekdays, Bill is a Norair automatic machine dispatcher in Manufacturing Control, the same department where he began his employment with Northrop in 1942.

FORTY YEARS OF SEATING fans at the Los Angeles Memorial Coliseum; that's the record of Bill Stout (left), Norair automatic machine dispatcher, who's worked 22 of those years handling audience control for the Rams. Here, he checks out seating schedules with Northrop employees Carl Lippon (center) and Russ Gimbrone.

Dr. Y. P. Gupta Appointed Lab Director

Dr. Y. P. Gupta has assumed new duties as director of the Materials Sciences Laboratory at Northrop Corporate Laboratories (NCL).

Dr. Donald A. Hicks, Northrop vice president of Corporate Research and manager-NCL, announced the appointment and indicated Dr. Gupta will be responsible for planning, initiation and directing research and development on materials of interest to Northrop Corporation's future objectives.

Dr. Gupta

Dr. Gupta is a native of India. He holds B.S. (1953) and M.S. (1955) degrees in physics from Delhi (India) University, a D.I.I.SC degree in metallurgy (1957) from the Indian Institute of Science and a Ph.D. (1963) from the Massachusetts Institute of Technology in metallurgy.

From 1958 until 1963, Dr. Gupta was a research assistant at MIT and from 1963 until joining Northrop served as an assistant professor of metallurgy at the University of Minnesota.

His teaching experiences include instructing classes in kinetics of solids, electron microscopy, mechanical behavior of solids, thermodynamics of solids and general introduction to materials sciences.

Dr. Gupta has authored or coauthored some 20 technical papers in leading scientific journals over the past four years. He also served as consultant-cum-research metallurgist for the National Company, Inc. of Massachusetts on the Atomic Beam Tube and Nuclear Magnetic Resonance programs.

HALLICRAFTERS IN VIETNAM — Curt Hammond (left) and J. C. Mathews of The Hallicrafters Company examine a model of the WR 4000, which is being sent to military post exchanges in Vietnam. The radio will enable American soldiers to hear U.S. broadcasts from the Voice of America and other English-language stations throughout the world. Hallicrafters is a subsidiary of Northrop Corporation with headquarters in Chicago, Illinois.

Page Receives Contracts For Work in Germany, Iran

Page Communications Engineers has been awarded contracts to provide communications equipment for the U.S. Army in Germany, and to design and engineer a satellite communications station for the government of Iran.

Page, a subsidiary of Northrop Corporation, will engineer, build and install communications equipment at the European Command Center in Stuttgart, Germany. The center will be used by the Army for the transmission and reception of information at the command center, which recently was moved from Camp des Loges, France. Permanent facilities are scheduled to be completed by July.

This contract, which includes teletype systems, sound amplification equipment, and graphics and briefing systems, was awarded by the U.S. Army Electronics Command at Fort Monmouth, New Jersey.

The Iranian letter contract was awarded by the Imperial Government of Iran. The installation, which will operate through the International Telecommunication Satellite Consortium, will be able to receive and transmit telephone, television and other forms of communications, all via satellite.

Page is building the first high capacity earth station in Latin America, to be in service in Panama late this year. Page previously has designed and built satellite earth stations in the United States, Thailand and Australia.

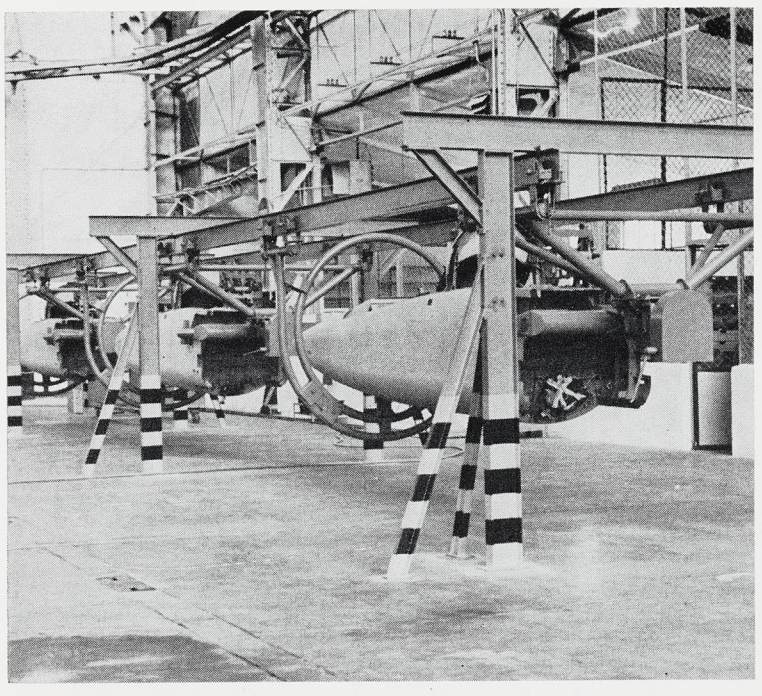
Travel Club Plans Colorado Ski Trip

February 1 is the deadline for reserving one of the limited reservations (only 45 available) for an all-Northrop Travel Club excursion to the Aspen, Colorado, ski area.

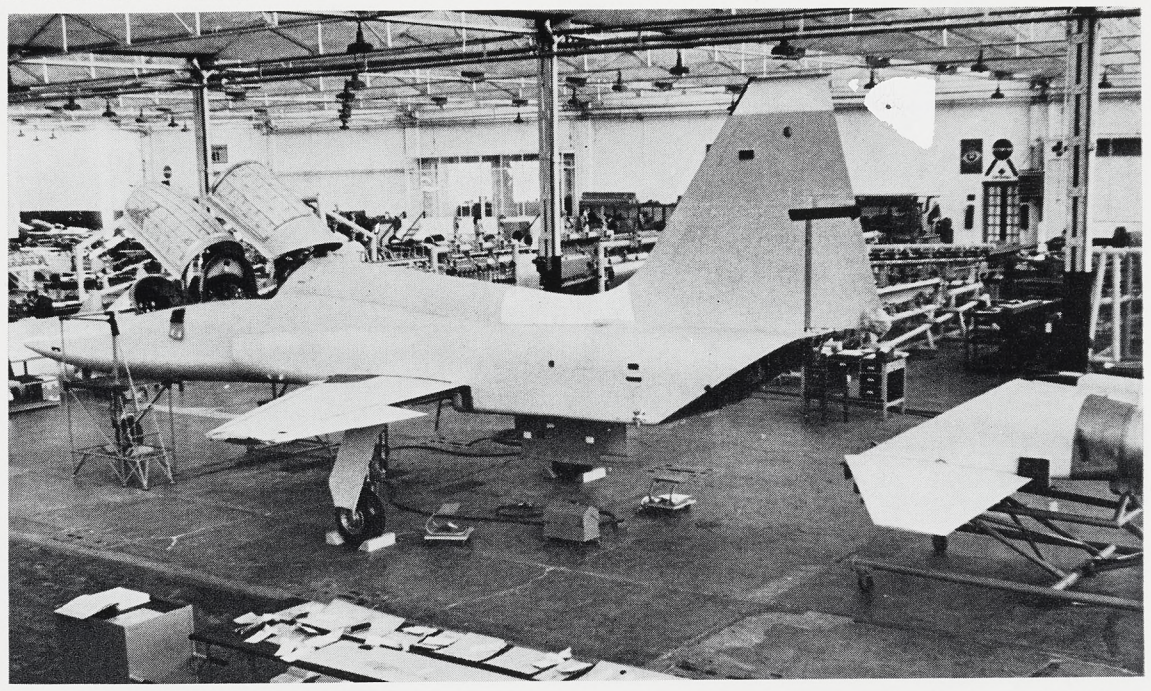
The tour departs March 30 and returns April 6.

The $192.50 per person package includes round trip jet air fare, seven night's lodging (Molly Gibson Inn) with continental breakfast, and a six-day ski lift ticket good for four ski areas.

A deposit of $120 is required on or before February 1 with the balance due by February 29. Contact Personnel Activities outlets at any Northrop facility.



SPANISH NORAIL—At Sevilla a modern new NORAIL production system serves CASA. Three F-5 nose sections are shown on the assembly line moving toward completion.



NEARING COMPLETION—A Northrop F-5B for the Spanish Air Force is going through final assembly operations at Getafe. This CASA facility serves in a capacity similar to Norair's Palmdale Facility, carrying out final assembly operations that lead to production flight test.

CASA Moves Ahead Toward F-5 Production

Northrop employees may tend to take our F-5 fighter production at Hawthorne pretty much for granted . . . but it's a brand new ball game when another company starts to build our sleek supersonic beauty overseas.

That's the task facing CASA—short for Construcciones Aeronauticas, S.A.—the Spanish aircraft company licensed by Northrop to build the F-5 for delivery to the Spanish Air Force. And it's a task that's keeping Norair people busy, too . . . because we are providing full-scale technical support for CASA's F-5 production program under the terms of a technical assistance agreement signed early in 1965.

Although most of CASA's aircraft production has been performed under license agreements with foreign aircraft manufacturers, the company designed and built its own high-wing light plane in 1929 and later produced it in several versions. A design office was established in 1946 and three prototype airplanes were designed and built for the Spanish Air Ministry in the years that followed. These were the C-201 Alcotan, a 10-place twin-engined transport; the C-202 Halcon, a more advanced 14-place model; and the C-207 Azor, a much larger airliner designed to carry 30 to 40 passengers. Several substantial production contracts for these CASA aircraft were received from the Spanish Air Ministry and the C-207 is now in wide use by the Spanish Air Force as a troop transport.

One of the striking aspects of CASA's 43-year aircraft manufacturing history is its long association with many of the world's best-known aircraft companies. More than 1,650 aircraft of all types were produced through 1965, by far the greatest percentage of which were those built under license agreements. More recently, CASA has been engaged in several large-scale projects for the modification, overhaul, and/or maintenance of American military aircraft. This work has given CASA considerable familiarity with the design and construction of modern operational jet aircraft, experience which will be of value to them in building our F-5 fighter.

CASA's plant facilities and equipment have been more than adequate to meet the fabrication and assembly requirements for previous generations of military and commercial aircraft, but production of the supersonic F-5 called for certain fabrication processes and facilities that had never before been used in Spain. This meant that our help would be required in setting up the required facilities and providing the technical know-how for their operation.

Accordingly, a technical assistance agreement was made in February 1965, calling for Northrop to provide facility engineering support and to assist in laying out and equipping the new facilities. We are also required to provide specific types and quantities of technical data, tooling, raw materials, purchased parts, fabricated parts and components, equipment, and 10 knocked down F-5 shipsets—as well as to furnish qualified people as advisors to help CASA get production rolling and to work with them in meeting planned production milestones.

All F-5 fabrication and assembly work except for parts and components made in the United States will be done at CASA in Getafe and Sevilla. The Getafe facility, about 10 miles from Madrid, is a 624,000-square-foot plant complex comprising modern aircraft fabrication and assembly shops, quality control and metrology laboratories, and an 86,000-square-foot hangar for the modification and overhaul of present-day military jet aircraft. A lateral annex to the main plant houses well-equipped hydraulic, electrical, electronic and instrument shops.

As earlier mentioned, certain new facilities were required to ready the Getafe plant for full-scale F-5 production. With the technical assistance of Northrop specialists, a honeycomb bonding facility containing a large autoclave was installed. Similarly, other Northrop specialists helped CASA people plan and install a plastic laminate and hot forming facility, hard anodizing equipment and special machine tools needed for fabricating landing gear components.

Over 50 per cent of CASA's F-5 manufacturing and assembly operations are being done at Getafe. These include the fabrication and/or assembly of wings, boattail, speed brakes, canopy, pylons, landing gears and 150-gallon tanks. Then, after engine buildup and receipt of fuselage and vertical tail structures built at the Sevilla plant, Getafe becomes a Spanish version of our Palmdale Facility, handling all final assembly and production flight test operations.

The main Sevilla facility is located on the outskirts of the city adjacent to the Tablada military airport and connected to it by a taxi strip. CASA has a second major facility in the Sevilla area, located at the San Pablo Airport and used principally for aircraft overhaul. Those portions of the F-5 being produced by CASA at the Sevilla facility are manufactured in a 290,000-square-foot plant which is fully equipped for standard aircraft fabrication and structural assembly work. As at Getafe, however, additional facilities had to be installed at this plant to meet F-5 production needs, including a chemical milling facility, expansion of existing heat-treat and machine shop capabilities.

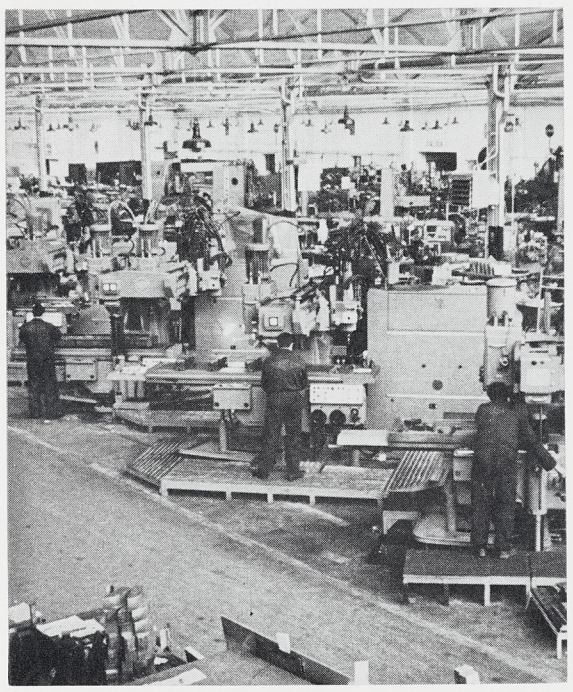
CASA is producing F-5 seats, main fuselage structures and the vertical stabilizer in Sevilla. As shipsets are completed, they are loaded on trucks and shipped to Getafe for sew-up and final assembly.

Norair people have been working at Getafe and Sevilla with CASA engineers, technical specialists and production people since early in 1966 . . . and this assistance will continue until CASA's present contract to build 36 F-5A's and 34 F-5B's has been completed.

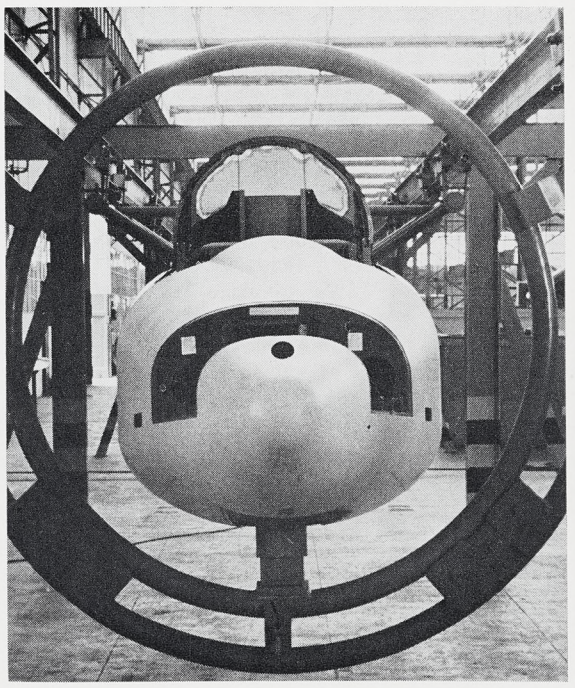
Editor's Note—Construcciones Aeronauticas, S.A. (CASA), the Spanish aircraft company licensed by Northrop Corporation to produce F-5 tactical fighters for delivery to the Spanish Air Force, is moving forward aggressively on that effort.

This report was prepared by Northrop Norair personnel working closely with CASA personnel in Spain and forwarded through the office of Paul Jacobs, SF-5 Program manager.

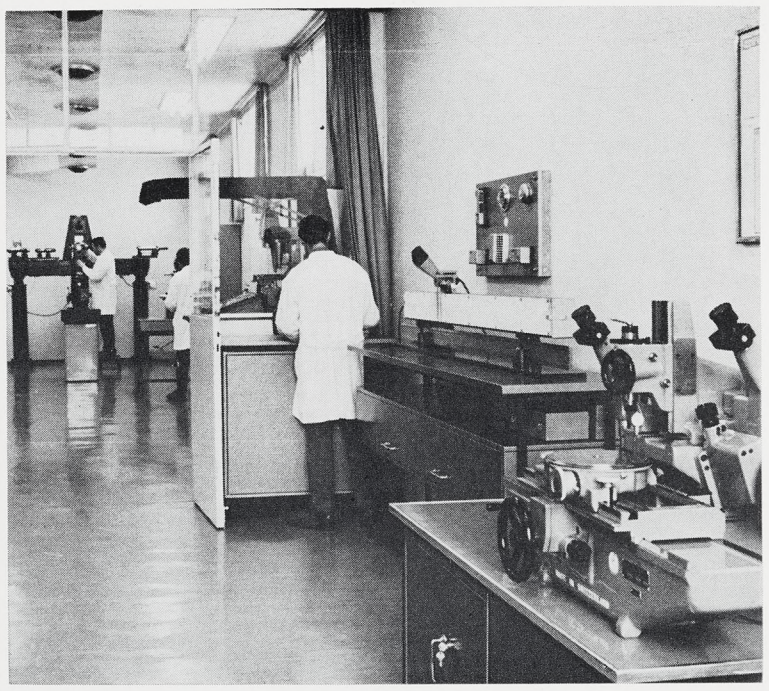
Because it is a timely and informative chronicle of current activities that also adds interesting new insight on CASA's 43-year aircraft manufacturing history, the editors feel it is of general interest to all Northrop employees.



MODERN MACHINE SHOP — At Getafe, Spain, CASA personnel utilize modern precision machinery to produce parts and components for the Spanish F-5 tactical fighter program.



LIKE A BIG EYE—An F-5B nose section at Sevilla is ready for assembly operations. CASA's Sevilla facility provides structural assembly capability as well as standard fabrication support.



SPOTLESS LABORATORY—This well-equipped laboratory at Getafe is capable of carrying out tests on all types of materials. Other laboratories are available for quality control and metrology tasks required to support the production of F-5's in Spain.

Stevens Gains Key Posts For National Convention

Frederick Stevens, Corporate vice president and Nortronics general manager, has been named to two key assignments for the 1968 National Winter Convention on Aerospace and Electronic Systems.

Mr. Stevens

Northrop President Thomas V. Jones is a member of the advisory committee for the important event, to be held February 12 through 14 at the International Hotel in Los Angeles.

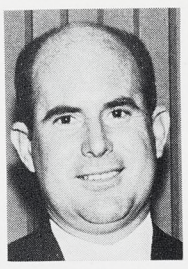
Mr. Stevens will be co-chairman of "Oceanography—a New Challenge for the Electronic Engineer," a technical session scheduled for February 14. He is also on the convention's Technical Program Committee.

The over-all conference theme is "Frontiers in Electronics."

General chairman of the conference is S. F. Eyestone, president of Autonetics, a division of North American Rockwell Corporation.

* * *

William J. Grinnell of Norair Packaging and Materials Handling has been installed as president of the Southern California Chapter of the Society of Packaging and Handling Engineers.



Mr. Grinnell

Mr. Grinnell will serve a two-year term, beginning this month. He was installed at a dinner meeting last month.

Also installed from Norair were Charles M. English and Marshall R. Shelp, both of Packaging and Materials Handling. Mr. English is a director of the group, and Mr. Shelp was named chairman of the Manpower Utilization Committee.

* * *

John E. Oliver, Corporate administrator of Product Licensing, has been elected president of the Licensing Executives Society, an international organization incorporated to advance the practices of Licensing.

Mr. Oliver

Mr. Oliver, a charter member of the group, has been chairman of the Licensing Committee of the Los Angeles Chamber of Commerce since 1957.

The Licensing Executives Society was formed in 1965. It has more than 400 members, organized into Eastern, Midwestern and Western regional chapters in the United States.

Golf Tournament Results Listed From Nortronics

The annual Nortronics Christmas Golf Tournament highlighted the yearend holiday for a field of 55 Nortronics golfers, and winners of the two-day 36-hole event have been announced by NRC Golf Commissioner Dave Krieghoff.

Five contenders won trophies and gift certificates. Dave Rice had low gross in the tourney, while Herb Bansbach registered low net for the 18-hole rounds at El Dorado and Montebello courses.

Meanwhile, Bob Abel, Dave Jenkins and Jim Dower captured honors in the first, second, and third flights, respectively.

Plans for the February 17 tournament at Green River Golf Course in Corona are already under way with reservations now being accepted.

January tourney results from Elkins Ranch are being compiled.

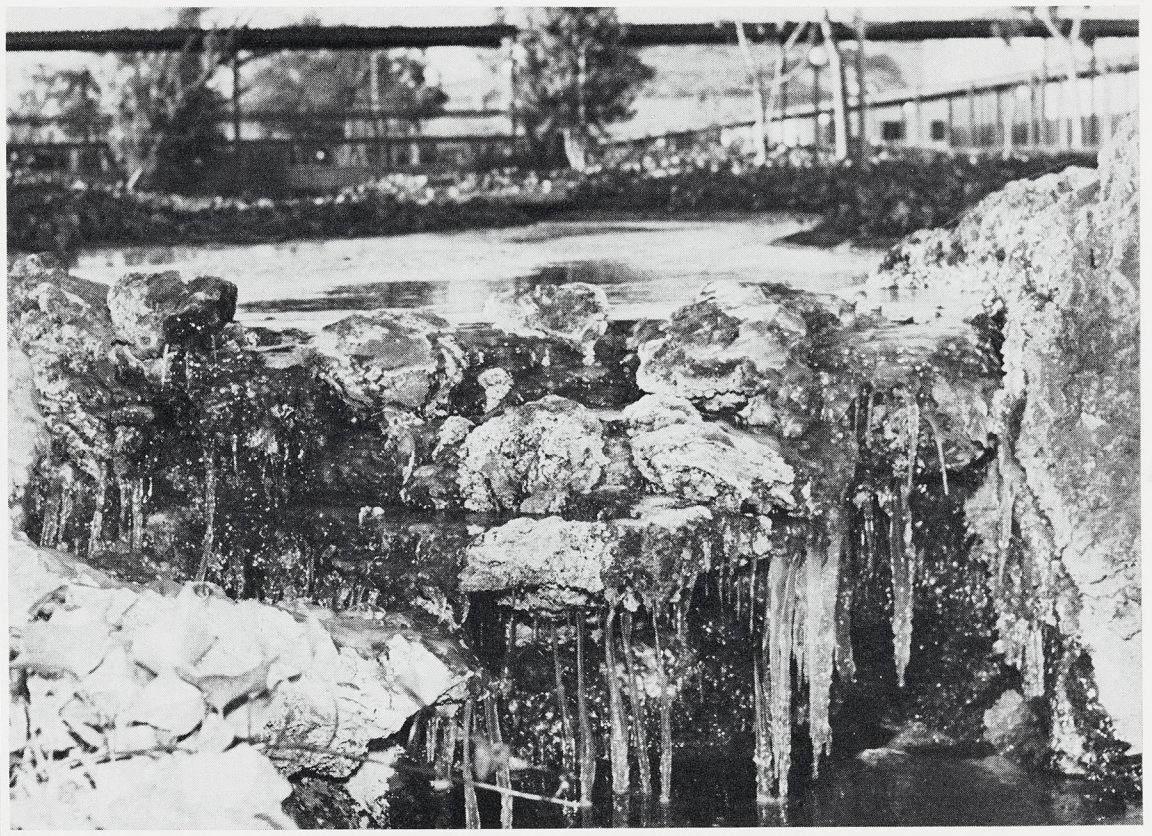
NRC To Sponsor 'Camelot' Showing

A limited number of choice reserved seats for the 2 p.m. February 3 showing of the motion picture musical Camelot is available through Northrop Personnel Activities outlets.

Regular $3 loge seats are available for $2.40, and $2.75 orchestra seats may be obtained for $2.20 through NRC sponsorship.

Camelot stars Richard Harris and Vanessa Redgrave. It is currently in an exclusive engagement at the Pacific Cinerama Dome Theatre, Sunset Boulevard (near Vine) in Hollywood.

WORLD TRAVELERS—Northrop Travel Club members pose before a native hut in Tahiti during their recent tour which also took them to New Zealand, Australia, Fiji Islands, Samoa, Moorea and Bora Bora.



THE NORTH POLE? No. This pond with its icicles is on the grounds at Northrop Ventura. A recent stretch of cold weather brought overnight temperatures down below the freezing point, giving Ventura employees this rather unusual sight when they reported for work. Other results of the cold spell included frost on lawns and bushes.

Lois Paris Installed by Women's Club

Lois Paris of Norair Contract Pricing was installed last week as 1968 president of the Smoothsayers Toastmistress Club, a women's public speaking group affiliated with the Toastmasters.

Mrs. Paris

Mrs. Paris and the other officers were installed in a dinner meeting at Dandel's Restaurant in Los Angeles on January 10.

Other incoming officers are:

Mrs. A. V. Dougherty, Northrop Systems Laboratories, Palos Verdes, first vice president; Mrs. Paul Clack, Norair Documentation, second vice president; Mrs. J. R. Wilkins, Delta Air Lines, secretary; and Mrs. Clarissa Keinonen, Norair Cost Accounting, treasurer.

The group's next meeting will begin at 6:15 p.m., January 24, at Dandel's Restaurant, Western Avenue at 120th Street.

Youth Training Course Planned By Toastmasters

A new Youth Leadership training program under sponsorship of Northrop Toastmasters Club begins an eight-week run February 10. It is open to the sons and daughters of Northrop employees and other area youth between the ages of 15 and 18 years.

Sessions will be held each Saturday (9 to 11 a.m.) at NRC Clubhouse, Hawthorne. There is no charge for the training.

Application blanks may now be obtained by parents through Personnel Activities outlets.

This specialized training is designed to teach youth vital communication skills—public speaking, thinking on your feet, parliamentary procedures, and effective communication of ideas and ideals.

ADVISORY COMMITTEE

DOD Chooses Warrick

Northrop Corporation's G. L. Warrick has been named to a newly established Department of Defense-Industry Assets Management Systems Advisory Committee.

This committee held its initial meeting December 19 at the Pentagon.

The committee will serve until November 30, 1969.

It will provide a forum for the industrial community and DOD representatives to discuss sets of methods and procedures by which a contractor manages his use of labor, technical skills, materials and other resources.

It will also provide a method for evaluating progress and the use of resources on a military contract.

Colonel Herbert Waldman, USAF, director for Assets Management Systems, Office of the Assistant Secretary of Defense (Comptroller), is the committee chairman.

Mr. Warrick, supervisor of Government Reports for Northrop, is one of a number of key industry men named to the committee and was selected to serve as chairman of the contractor members of the group. He is also currently filling his second term as national chairman of the Aerospace Industries Association's Government Reports Committee.

READY FOR F-5 FLIGHT is General Driss Ben Aomar, commanding general of the Royal Moroccan Armed Forces. The general received his initial orientation flight aboard an F-5B late last year in Morocco.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

For Sale

Sunbeam, 1963 Alpine convt., $995. 375-0758. A

Dune Buggy, newly built on 1961 VW chassis, rebuilt 40 h.p. eng., $1,800. 370-2876.

Volkswagen, 1965, sedan, 25,000 miles, $1,100. 370-6490. A

Mustang, 1965 2+2, GT, 4-spd., many extras, $1,900. 337-1664. A

Guitar, elec., amp & case, $55. 375-6071. A

Mustang, 1966, 3-spd. 6, $1,700. 896-4543.

Teaching Machine, World Book, $40. 714-526-2962. A

Precision Tools, complete set, in Gerstner tool box, $150. 370-3321. A

Cadillac, 1964 convt., air cond., $2,200. 644-3229. A

Tape Recorder, Ampex 860, w/mikes, still on warranty, $240. 673-1462. A

Acreage, 5 acres in Antelope Valley, $35 down, $35 mo., incl. 6% interest, $3,500. 378-1026. A

Motorcycle, 1967 Harley-Davidson XLH sportster, $1,595. Box 101. A

Lot, 70'x125', R-1 zone, terms avail., $5,100. 941-5527. A

Sailboat, 18' P-Cat, 2 yrs. old, ss/alum. mask, 1½ h.p. Seagull, marina slip inc., $900. Box 102. A

Aquariums w/access., $4-$9. 714-630-1914.

Hair Dryer, on stand, adjustable, $25. Box 103. A

Baby Items, cribs, mattress, bathinette, other items, $2.50 to $47.50. 989-3507. A

Shower Door, sliding, safety glass, std. tube size, $18. 323-8797. A

Lens, 135mm f:3.5 auto. Schneider for Exakta, $50. 835-3869. A

Crash Helmet, Bell Toptex, size 7¼, $25. 534-1231. A

Sloop, 29' Columbia 29, Mark II, sleeps 6, full cruising & racing eqpt., $13,900. 714-675-2920. A

Camper, 1962 Merced, butane ref., lights, self-contained water supply, $1,150. 448-8951. A

Dresser, 6-drwr. w/mirror, natural finish, $65. 672-2723. A

Ice Skates, boy's size 1, black, $10. Box 104. A

Boat, 14' runabout, windshield, $500. 675-1982. A

Power Edger, $30. 882-0761. A

Horse, 7 yrs. old, quarter-type mare, 10 mos. in foal, $250. 324-3638. A

Volkswagen 1600, 1966, fastback, radio, $1,725. 638-4954. A

Chevrolet, 1964 Impala Super Sport, V-8, 195 h.p., convt., r/h, p/s, $1,700. 254-7045.

Mini-Bike, $98. 246-4495. A

Stove, O'Keefe & Merritt, $40. 326-6214. A

Oldsmobile, 1959 Holiday h/top, new trans., carburetor, $350. 823-2655. A

Oldsmobile, 1958 98, full power, $150. 714-826-9164. A

Station Wagon, 1961 Super 88 Oldsmobile, r/h, luggage rack, $650. 672-5798. A

Ironer, elec., floor model, $30. 672-7167. A

Chevrolet, 1964 Super Sport, convt., V-8 327 cu. in., 4-spd., r/h, $1,100. 691-0106. A

TV, 23" color, lge. maple cabinet, $325. 644-4529. A

Lawnmower, power, sep. control for drive & blade, $40. 714-962-6983. A

Guitar, elec., Fender Stratocaster, case, $200. 371-9925. A

Apt Units, 8 2-bdrm., $77,000. 837-0989. A

Chassis for Volkswagen 1600, complete w/ seats, 6,000 miles, $750. 670-5084. A

Ford, 1956 4-dr., 6-cyl., auto. trans., $95. 679-6219. A

Camera, 8mm movie, Bolex f:1.9 & telephoto lens & filters, case, $50. 675-1378. A

Pickup, ¾-ton GMC, 1962, Hyd. trans., r/h, 2 extra 22-gal. gas tanks, $1,150. 944-3794. A

Honda 50, Model C100, $100. 378-4676. A

Box Spring, Englander, twin size, $5. 545-1631. A

Typewriter, Smith Corona Galaxie II, portable w/case, $70. 545-1348. A

Range, O'Keefe & Merritt, gas, $35. 823-2242. A

Piano, 5' grand, 1926 Hamlin, $250. 375-3756. A

Accordion, 120-bass, $125. 674-1825. A

Books, 44, complete collection of "Hardy Boys" detective stories, $10. 325-4580. A

Air Conditioner, G.E., $35. 329-6848. A

TV, 15" Packard Bell, walnut cabinet, $15. 675-2331. A

For Sale

Trailer, combination utility & camping, bltin stove & ref. w/20 lb. gas bottle, $300. 675-7928. A

Bicycle, girl's, $14. 328-3306. A

Dinette Set, table w/6 chairs, $45. 714-535-1694. A

Vacuum Cleaner, 2 h.p. Constant Vacuum, canister-type, many attachments, $115. 714-544-4700. A

Ford, 1940 coupe, $400. 371-8929. A

Home, 2-bdrm. Spanish stucco, sep. dining rm. or convt. den, det. dble. gar., 50 x 150 R-3 lot, near Norair, $25,900. 755-4534. A

Camper, 8' walk-in, butane stove w/oven, sleeps 3, $300. 320-5367. A

Washer, Kenmore, $50. 679-1051. A

Camper, 1965 Pullman w/slide-out canopy, $425. 714-526-2071. A

Ford, 1962 Galaxie 500, 4-dr., 8-cyl., auto. trans., p/s, air, radio, $380. 645-5786. A

Water Softener, glass-lined tank, $20. 371-5072. A

Mustang, 1966 GT h/top, p/s, auto., V-8, $1,800. 633-9289. A

Honda 150, 1962, partially disassembled, $75. Box 105. A

Elva MKV, Chevy II, fuel injection, race equipped, trailer, $1,400. 714-539-7071. A

Amplifier, Eico HF87, 35 watt per channel, basic, stereo, $50. Box 106. A

Ford, 1959 Fairlane, auto. trans., 14,000 mi. on rblt. eng., $275. 635-3056. A

Duplex, 3-bdrm. ea., 1¾ baths ea., bltins, pvt. sundeck & yard, plus house, 2-bdrm. on same property, 10% dn., $62,500. 673-4475, 292-8053. A

Jeep, 1962 Land Rover, $1,250. 423-4491. A

Mustang, 1966 h/top, 6-cyl., r/h, Cruise-o-matic, $1,800. 714-962-2367. A

House, 2-bdrm., walking distance to Hollywood Race Track & Forum, air cond., block wall fence, many extras, $26,900. 674-3953. A

Chevrolet, 1962 Impala, 4-dr. h/top, r/h, auto. trans., p/s, $795. 865-7776. A

Honda 50, 1965, $125. 363-3843. A

Camera, Fairchild Cinephonic, projector, case, many extras, $250. 714-528-7636. A

Golf Clubs, 1966 Haig Ultra, D-2, stiff shaft, 3 woods, 9 irons, $130. 830-6163. A

Chevrolet, 1963 Impala Super Sport, p/s, p/b, tach., $1,150. 676-2347. A

Bed, king size, 6 mos. old, 2 box springs & mattress, Simmons & hvy. duty frame, $175. Box 107. A

Volkswagen, 1965 sunroof sedan, r/h, $1,175. 831-6480. A

TV Antenna, Winegard, color, $6. 788-9709. A

Station Wagon, Rambler, 1957 Cross-Country, 4-dr., 6-cyl., o/drive, $135. 675-2159. A

Honda, 1965 Superhawk, many extras, $400. 805-947-4782. A

Oldsmobile 88, 1955 club cpe., r/h, $115. 323-1417. A

Camera, Polaroid, 900 model, leather carrying case, $70. 370-3821. A

Home, 3-bdrm., bltins, $24,500. 679-4840. A

Oldsmobile, 1967 Cutlass-Supreme, Holiday sports cpe., a/c, AM-FM radio, console, many extras, $3,000. 756-2492. A

Movie Camera, Anscomatic ST/87 Super 8, $50. 675-2723. A

Panel Truck, 1955 Chev., ½-ton, needs clutch work, $325. 839-5772. A

Ski Boots, men's size 11, $5. 376-5810. A

Porsche, 1959 convt., recent eng. o/haul, Michelin radial tires, Blaupunkt radio, $1,575. 377-8731. A

Curtains, 20 panels, 62" x 24", brown & white Hawaiian print, $15 or sell sep. 379-3487. A

Buick, 1954, p/s, p/b, new paint, $100. 374-5712. A

House, 3-bdrm., 1½ baths, bltins, d/washer, fireplace, $29,950. 329-2174. A

Drum Set, Crown, 4-pc., cymbal & hi-hat stands, $145. Box 108, 781-3854. A

Camera, Olympus, 35mm, range finder w/ case, $25. 375-7401. A

Chevrolet, 1959 2-dr. h/top Biscayne, 6-cyl., auto. trans., p/s, $225. 714-528-6113. A

Tape Recorder, G.E., solid-state stereo, used 6 hrs., $225. 320-2897. A

Austin Healey, 1955 Sportster, wire wheels, $200. 679-7840. A

Sewing Machine Cabinet, can be modified to hold portable or fix the enclosed Eldridge elec., $20. 323-4209. A

Camera, Yashica actron subminiature, f/2.8 lens, use Minox film, $65. 541-2071. A

House, beach area, 3-bdrm., 2½ baths, living rm., family rm., sun deck, beam ceilings, $37,500. 374-0127. A

Mini-Bike, 8 h.p., lights, horn, dual tanks, racing seat, $158.50. 393-5649. A

Mini-Bike, 4 h.p. Briggs & Stratton eng., clutch driven, o/hauled, $135. 373-3111. A

Sailboat, 24' Star Class day sailer, $1,095. 326-8009, 534-0610. A

Sunbeam Rapier, 1961 sedan, 36,000 miles, r/h, $250. 754-5358. A

Hi-Fi Cabinet, 2' x 2' x 3' 2-adj. shelves, pull-out drawer for changer, $20. 426-4060. A

Bumper Jack, Saf-Lift, $5. 679-3052. A

Tape Recorder, 4-track, 3-spd., stereo, all attachments, Concord 444 model, $150. 323-2385. A

Station Wagon, 1967 Ford Country sedan, 6-pass., 390 2V eng., a/c, auto., p/s, p/b, $3,250. 324-2992. A

For Sale

Corvette, 1964 Fastback, AM-FM, p/s, auto. trans., $2,295. 823-4703. A

Stove, Maytag, gas, $50. 329-7447. A

Ski Boots, dble. boots, size 6, $7.50. 328-6662. A

Dresser, mahogany, & vanity w/mirror, $35. 674-8997. A

Cadillac, 1958, Coupe DeVille, heater, full power, needs paint, $275. Box 109. A

Boat, 14' catamaran, 2 35 h.p. Mercury elec. start, trailer, tach., $775. 675-3254. A

Station Wagon, 1960 Chevrolet, V-8, r/h, auto., $375. 714-962-5713. A

Station Wagon, 1959 Plymouth, V-8, auto. trans. recently o/hauled, p/s, a/c, $250. 324-7850. A

Porsche, 1955 Speedster, new paint, $1,499. 325-1479. A

Corvair Monza, 1961, reblt. 4-spd., new clutch & brakes, $395. Box 110. A

Outboard Motor, 75 h.p. Johnson, under 100 hrs., $645. 379-2326. A

Washer, Kenmore, $25. 370-4475. A

Stove, gas, apt. size, $25. 326-5448. A

Freezer, Coldspot w/lock, $65. 329-3721. A

Trailer, ¼-ton, spare tire, $75. 377-3642. A

House, completely remodeled, 3-bdrm., convt. den, 2 baths, w/w cpt., dps., f/a heating, fireplace, bltins, 2-car gar., patio, small sep. studio, fenced yd., $43,000. 475-2101. A

Box Spring & mattress, Serta, 54"x80", extra long, $25. 645-3986. A

Suzuki, 1966, 150 cc bored to 160 w/extra chrome, $315. 378-1561. A

Lot, ½ acre bldg. site in Agoura, horses o.k., city water, electricity & phones, $8,500. 783-8271. A

Station Wagon, 9-pass., 1966 Pontiac, air cond., many extras, 31,000 miles, $2,995. 324-5342. A

Chevrolet, 1957 Bel Air, V-8, 4-dr. h/top, auto. trans., r/h, p/s, $200. 755-6830. A

Typewriter, Remington Deluxe portable w/ case, approx. 10 yrs. old, $50. 714-635-1686. A

Oldsmobile, 1962 convt., complete o/haul, full power, fact. air, $1,195. 836-0507. A

Washer, Maytag auto., $35. 326-1876. A

Buick, 1955 Riviera, p/s, p/b, p/w, $300. 478-1456. A

Honda, 1966, 160 cc, w/factory 175 cc kit, extras avail., $350. 679-3181. A

F.I. Heads, for 327 Chev., ported & polished, screw-in studs, $100. 545-5345. A

TV, 1959 RCA Victor 21", console, $35. 679-6318. A

Tape Player, stereo, 8 & 4-track cartridge, autosonic, $100. 675-4505. A

Coin Viewer, Scan-O-Matic, $7. 324-9013. A

Bicycle, boy's Schwinn Sting Ray, $20. 823-1788. A

Camper, fiberglass, fits 8' truck bed, $100. 371-7382. A

Condominium, 4-bdrm., dble. gar., 2½ baths, fireplace, near Disneyland, $24,000. 714-638-4916. A

Tape Recorder, Webcor Regent Coronet, stereo, 2 & 4-track, $65. 329-7998. A

Beds, twin w/box springs, mattresses, wooden frames, h/boards & f/boards, antique white, $25. 370-7092. A

Mustang, 1967 convt., 289, p/s, 3-spd. auto., r/h, $300 & take over $85.10 mo. pymt., approx. bal. $2,100. 677-4342. A

Wanted to Buy

Trailer for 13' Boston whaler boat. 776-1762. B

Range, eye-level oven, gas, 40", single oven preferred. 714-836-2025. B

Range, 36", gas w/griddle & elec. refrigerator & freezer-combination. 676-8982. B

Shop Manual, 1963 Pontiac Bonneville, with or w/out 1964 supplement. 944-5946. B

Trains, old elec., manufactured prior to World War II. 714-879-0537. B

Supercharger, VS57 Paxton without accessories. 693-4117. B

Transportation Car, must be reasonably priced & mechanically reliable. Box 111. B

Free (To Be Given Away)

Lumber, lge. yard full of used or old 2x4's, 2x6's, 1x6's incl. shed & lean-to. 377-1075. D

Dog, female, weimaraner & queenland heeler. 714-879-9756. D

Dog, female, black & white, 1 yr. old, 16" high, 20 lbs. 320-6388. D

Rentals Offered

Room, 5 min. from Northrop, pvt. entrance & bath, $10 wk. 676-6841. E

Apt, 2-bdrm., bltins, garb. disp., closed gar., small yard, all elec., 20 min. to Norair, $125 unfurn.; $145 furn. 375-2091, 375-9397.

Apt, 2 bdrm., furn., bltins, ocean view, $145. mo. 372-5808. E

Townhouse, 3-bdrm., 3 baths, bltins, air cond., landscape & pool maint. inc., avail. Feb. 1, $225 mo. lease or $250 mo. rent. 889-1554. E

House, 3-bdrm., 2 baths, fam. rm. w/stone fireplace, 5 min. from Northrop, unfurn., $170 mo. 321-6973. E

Apt, 2-bdrm., furn., pool, closed gar., near El Camino, $165. 324-8373. E

House, 4-bdrm., unfurn., 1¾ baths, fam. rm. & bar, near Norair, $200 mo. 476-4358. E

Cabin, Green Valley Lake, sleeps 12, $35. w/end; $55 wk. 320-2002. E

Rentals Offered

Apt, 2-bdrm., unfurn., water & trash paid, $100 mo. 325-5705. E

Apt, unfurn., 2-bdrm., 1½ baths, bltins, closed gar., adults, $130 mo. 675-2438. E

Apt, 1-bdrm., 3 blocks from King Harbor, bltins, gar. w/storage cabinets, $110. 376-9608. E

Apt, 1-bdrm., furn., all bltins, pvt. deck, lge. pool, sub parking, near Northrop, $145. 670-6084. E

Bachelor Apt, furn., stove, refrig., 4 blocks to Northrop, all utilities pd., $17 wk. 833-2512. E

Court Apt, 2-bdrm., fireplace, gar., pool privileges, ½ mi. from Northrop, $130. 675-9667. E

Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $20-$35 w/ends; $45-$75 wk. 754-5288. E

Rentals Wanted

House, 3-bdrm., alone on lot, unfurn., Hawthorne area, up to $150, have baby & pets. Box 112. F

Child Care Wanted

Woman to care for 3 children in my home, days, about Jan. 22, Hawthorne area, must have own transportation, $25 wk. 679-6219.

Lost

Bracelet, child's gold identification, w/the name Patty on front, at NRC Christmas party, Shrine Auditorium. 675-5802. J

Glasses, pink tint, prescription, & case. Box 113. J

Personals

To the friends of Alex Trebendis: May we express our deepest gratitude for your kindness & expressions of sympathy during our recent loss. MRS. PAT TREBENDIS & FAMILY. L

Our sincere thanks to the Northrop Recreation Club & our many Northrop friends for their kindness & concern extended to Marge during her illness & hospitalization. MARGE, BUD & SHEREEN BOWSER. L

I wish to express my sincere thanks to all my friends at Northrop for their kind expressions of sympathy at the passing of my wife, Annita. D. S. FIELD. L

I wish to express my appreciation & thanks to the Northrop Blood Bank for its contribution of blood during my recent illness. JAMES M. SMITH. L

Thank you for your kind expressions of sympathy at the recent passing of my father. Your thoughts at this time will always be remembered w/sincere gratitude, the family of Harland S. Nash, sr. WAYNE NASH. L

Sincere thanks for the flowers & kind expressions of sympathy during the recent loss of my wife. ELTON J. RAWL. L

I wish to express my sincere appreciation for your kindness & thoughtfulness at the recent passing of my wife, Rose Jesse. W. E. JESSE. L

Our sincere thanks for the contribution to the Heart Association in memory of my mother, Ruth Parton. B. E. SMELSER. L

For Sale or Trade

Record Player, CBS Mastercraft monaural, 4-spd. auto changer, $35 or consider trade for .22 cal. rifle. 941-1865. M

Firebird, Pontiac, 1967 400, mag. wheels, 4-spd., $3,000 or trade equity for late model used car. 324-6757. M

Motorcycle, 1962 Triumph, 650 cc, $625 or trade for VW or older Porsche. 679-4063. M

Honda, 1966, 305 cc, Superhawk, many extras, $550 or trade for pickup truck or van of comparable value. 372-0313. M

Motorcycle, 1964 Parrilla Wildcat Scrambler, 125 cc, $225 or trade for shotgun or rifles. 327-8477. M

Slot Car Set, 1/32 scale, new transformer & 2 hand controllers, cars, extra engs., $15 or trade for gas model airplane material. 377-6193. M

Mountaineers Plan Hawthorne Meeting

The NRC Mountaineers, a club of mountain climbing enthusiasts, will meet at 7:30 p.m. January 26 in the NRC Clubhouse in Hawthorne.

At the meeting, members will discuss their upcoming nine-week mountain climbing course, scheduled to begin on February 5.

The club is open to employees from all Northrop divisions and facilities. Additional information may be obtained by calling Commissioner Ken Ferrell on Norair ext. 2001.

NRC Sponsors Dance Classes

A new year has brought a new series of ballroom dancing classes under sponsorship of NRC each Thursday evening at NRC Clubhouse, Hawthorne.

The silver waltz is offered at 8 p.m.; the Bossa Nova at 9:15 p.m.

Rides and Riders

Rides Wanted

7:30 a.m. — 4:15 p.m.

Talbert & Bushard, Fountain Valley. R. B. Thompson, Norair, ext. 2094, 962-5698.

8 a.m. — 4:45 p.m.

Figueroa & 228th, Wilmington. Vera Rideout, Norair, ext. 2651, 830-4263.

Beverlywood Area, Los Angeles. Susan Gold, Norair, ext. 1314, 837-7524.

Rides Offered

7 a.m. — 3:42 p.m.

Hewes & Chapman, Orange. Looking for 2 riders from Garden Grove or Orange via San Diego Fwy. Larry Slininger, Norair, ext. 2484.

'Speechcraft' Dinner Series Set To Begin

A new Speechcraft Course opens tomorrow night and continues for an eight-week period under the auspices of the Northrop Toastmasters Club. It is open to all Northrop men and women.

Sessions meet weekly at 6 p.m. at the Sojourn Inn, Inglewood.

Outstanding educational speakers have been booked to discuss such topics as public speaking, critical listening, evaluation, and conducting meetings, along with regular Toastmaster emphasis on extemporaneous and prepared speaking.

Registration is $5 per person. Dinner at each session will be $3.50.

Dick Greetan, educational vice president of the Northrop group, will be in charge of the course with Felix Dunnett, past president, as assistant.

Mr. Greetan, ext. 1822; Mr. Dunnett, ext. 2264; Alan Caterson, ext. 4496; or Personnel Activities, ext. 2486, at Norair and Hank Greenberger, ext. 265 at Nortronics Palos Verdes will provide information.

Two To Serve In Cost Seminar

Two Northrop men will play key roles in a special meeting planned for February 3 (9 a.m.) by the Southern California Section, American Association of Cost Engineers.

The meeting, to be held at the North American Rockwell Recreation Center on Imperial Highway near the San Diego Freeway, covers "Use of Computers in Industry."

Jack Behrens, supervisor of Cost Estimating at Norair, will serve as program moderator. Maher Soliman, Norair computer application specialist, will speak on "Structural Logics for Computerization."

The meeting is open to all interested Northrop personnel.

Junior Girl Scout Troop Formed

A new Girl Scout organization (Junior Troop 1202) operating from York School, Hawthorne, has joined the list of Norair NRC-sponsored scout groups in the area.

Special ceremonies recently highlighted formation of the new group under the leadership of Joan Vars. Co-leaders are Sara Fernandez and June Potter. NRC-sponsored Senior Troop 116 participated in the investiture ceremonies and members of the NRC Sea Maids (Troop 123) presented the new group an American flag.

Safe Driving Course Held At Nortronics

The first formal vehicle operator training course at Nortronics Anaheim has been successfully completed by 149 Nortronics drivers who operate company vehicles as part of the company's "total accident control" philosophy.

"We now have a larger number of proficient vehicle operators licensed for material handling than ever before," Safety Administrator Al Van Der Most said, "and, ideally, we'd like to see every vehicle operator—the 'old hands' as well as the new—achieve the maximum capability in safe operating methods and damage control."

The program, coordinated by Garnet Sandeen of Personnel Training, will be repeated periodically for those who have not yet taken the course and received their license. Randy Lee, chairman of the Workman's Safety Committee, is the instructor for the course which includes a lecture, a training film, and equipment operation and handling techniques at the Orangethorpe and Page Court sites.

The Management Safety Committee selected Mr. Lee because of his long association with material handling vehicles and prior training at Norair.

Eleven Receive Service Awards At Nortronics

Eleven Nortronics employees will receive service awards during January. These initial ceremonies of 1968 will honor ten who have served 15 years, and one who has reached the 20-year mark.

Elwood Parrick, a senior technician in Environmental Engineering at Nortronics Hawthorne, will complete two decades of service to Northrop at the end of this month.

Eligible for 15-year pins are John Schindler, also at Hawthorne; and, from Anaheim, Charles Simpson, Duane Olmore, Charles Wiley, John Bedson, Charles Gross, William Temple, Stephan Kovach, Roy Hollingsworth, and Roland Jones. The latter five men are all from the Machine Shop unit.

JOY, TYPICAL of that shared by hundreds of recipients of Northrop's Needy Family Program, is expressed by these Pala Reservation Indian children. Nortronics employees donated more than $1,000 at Anaheim, Hawthorne and Palos Verdes, to send Northrop trucks filled with food, clothing and toys to our needy families in Southern California. The Pala Reservation, home of the Cupeno Indians, is south of Lake Elsinore.

ALSO TV 'STAR'

Marv Zuckerman—Key Man on the C-5

A Nortronics employee who is extremely valuable to the C-5 Program is a senior engineering writer in Don Mealy's Technical Proposals and Publications group at Nortronics Hawthorne.

Mr. Zuckerman

Pleasant-mannered Marv Zuckerman goes about his business of writing material connected with the C-5 Program with dispatch and a high degree of professional skill; as well as performing the job of editing proposals for new business, and serving on the C-5 Program's Change Control team.

For three years prior to joining Mr. Mealy's group, he played an important role in the performance of the Configuration and Management task for the Minuteman Voice Reporting Signal assembly.

At first glance, you might conceivably take Mr. Zuckerman for a teacher, but you probably wouldn't guess that he has an encyclopedic knowledge of surfing, nor would you be likely to identify him as a television "star." Yet, in his spare time, he is part and parcel of all these different things.

Mr. Zuckerman, who has his master's degree in English from USC, finds time to teach English one night a week at Los Angeles Valley College. The surfing experience in his life is totally vicarious, and came about while doing a review of an encyclopedia on the sport for "FM and Fine Arts" Magazine. He has also reviewed a book of poems for the magazine.

His lone television performance to date took place early one morning soon after KABC-TV asked Mr. Zuckerman to deliver a lecture on "The History of the English Language" on their weekday SCOPE program. Until then his only connection with TV was his weeknight viewing of "The Walter Cronkite News." But, he agreed to appear—until he was told that the show would air at 7 a.m. Normally, he would be on his way to Nortronics in Hawthorne at that hour. So he taped the 25-minute show, waited for the playback (which, incidentally, ran exactly as he had recorded it) and became his own critic. "I didn't mind the 'star-for-a-day' feeling or even the pancake make-up," recalled Mr. Zuckerman, "it was squeezing 1,500 years of history into 25 minutes that was the hard part."

Mr. Zuckerman has been with Nortronics for almost six years.

Sheriff Pitchess Endorses JA Emergency Kit

HESKO, the Junior Achievement company counseled by Nortronics Hawthorne's Navigation department advisors, has been commended by Los Angeles County Sheriff Peter Pitchess.

The sheriff lauded the South Bay-Centinela area achievers for their development and sale of HESKO's highway emergency safety kit. In praise of the project, Sheriff Pitchess said, "All motorists should be prepared for highway emergencies, and safety kits such as the Junior Achievement product can be of great help."

The kit includes flares and other highway markers, report forms, complete instructions on how to handle an emergency on the highway and even a dime for a call for help. The items are packaged in a compact plastic zipper bag and priced at $2.

Information may be obtained by contacting David Lawrence on Hawthorne ext. 516.

ACHIEVERS 'NAB' Sheriff Peter Pitchess as the first customer for their HESKO Company product, a highway safety kit. Closing in for the sale are South Bay-Centinela Junior Achievers Loren Stacy, (left) and Terry Grantham, HESKO president. The Los Angeles County sheriff endorsed the program.

Christmas Chairman Expresses Thanks

On behalf of myself and the entire executive committee for the annual Children's Christmas party, I would like to sincerely thank all of those persons who gave of their time and talent in making the occasion the success it was.

We have received numerous calls and letters complimenting the committee on a fine presentation. We, in turn, pass these praises on to you, the workers. With such wonderful cooperation, we can again look forward to an even more successful party next year.

Joe Kalina,
Christmas Party Chairman

Roy Gregory Appointed to P. R. Position

The Northrop Corporate office has announced the promotion of Roy W. Gregory to the position of Nortronics Public Relations manager, effective January 2, 1968.

Mr. Gregory

Mr. Gregory, a former reporter and editor with the Gainesville, Florida Daily Sun, succeeds Earl C. Parker who recently resigned to accept a position in Northern California. Mr. Gregory, a communications graduate of the University of Florida, is a veteran of seven years with Nortronics and formerly was executive assistant in Marketing at Nortronics. Since coming to California, he has completed postgraduate studies in public relations and journalism at California state colleges.

COST CONTROL

(Continued from page 1)

malfunctioning part to be corrected and retested on the spot—a big time saver.

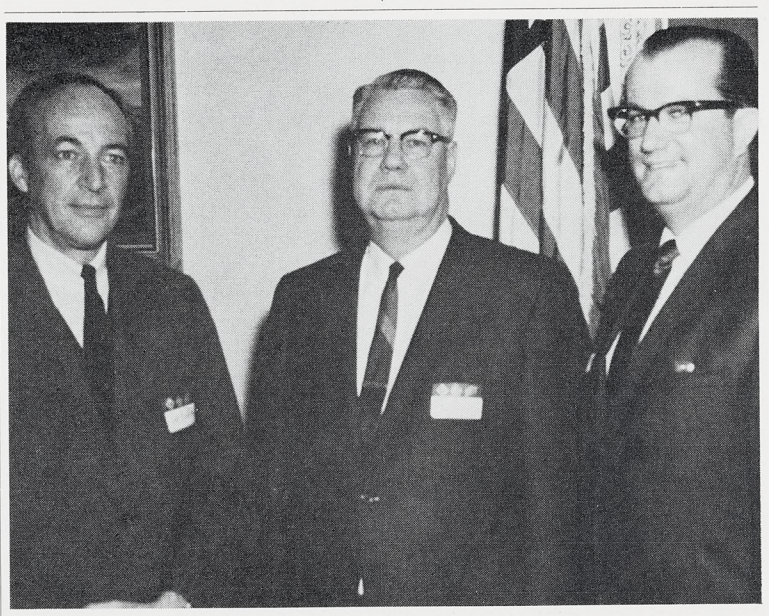
Visual aids are used throughout the line to simplify the assemblers' tasks. Lighting, a critical factor in assembling the miniature flat packs, transistors, microcircuits, has been redesigned for the work stations.

Manufacturing Engineering Methods personnel, under Bob Sheetz, designed work stations to accommodate the logical flow of work, eliminate operator fatigue, and design special fixtures to simplify certain tasks. One of many new time-saving devices is a specially designed lead cutter that reduces one routine operation from 4 hours to 10 minutes.

Not only have assembly methods been improved, but paper work has been decreased. Harry Colgate, chief of Manufacturing Operations, said:

"By going to visual aids, and doing a complete overhaul of our shop paper system, we have reduced the shop planning paper needed to build one complete subsystem from 33 pieces to 3."

On one computer subassembly line—the Arithmetic and Control "sticks"—innovations have trimmed the time needed to assemble an A&C stick from 5 hours to 1 hour.



NEW OFFICERS of the North Orange Boy Scout Council who were elected at a recent board meeting are (from left) James M. Ricketts, deputy manager of Nortronics Anaheim; Judge Max V. Eliason; and Philip L. Martin. Judge Eliason is the new president of the council, and Mr. Ricketts and Mr. Martin were chosen as vice presidents.

NORTHROP NEWS

NORTHROP NORTRONICS

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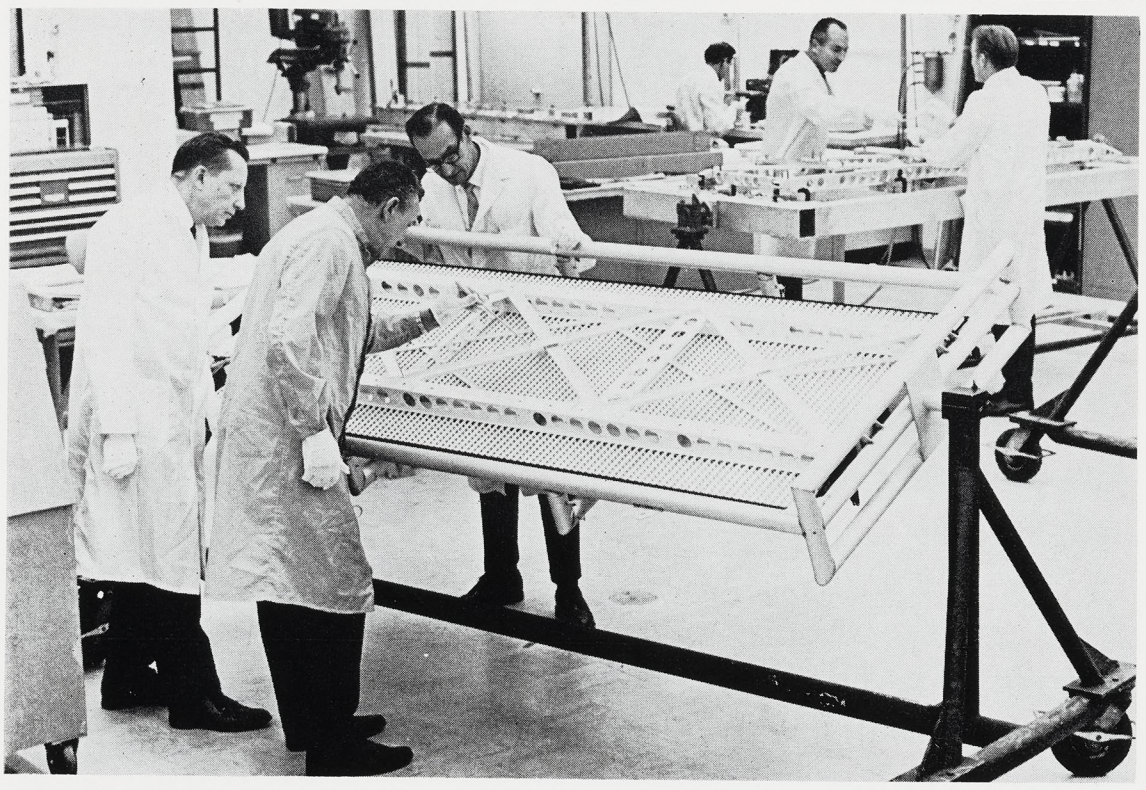


SOLAR PANEL PROGRESS is checked by some of the highly proficient technicians who have been responsible for its development. From left to right are Bob Schmidt, acting solar panel foreman; Al Bilinski, JPL Quality Assurance engineer, making a final customer inspection; Frank Slavens, inspector; Nick Hinzo, (back to camera), assembler; Harland Hampton, assembler; and Danny Richardson, technician. Additional photos on page 6.

Deliveries Under Way On Mariner Program

Deliveries of the basic elements of flight hardware in the Mariner Mars '69 Project (MM '69), to California Institute of Technology's Jet Propulsion Laboratory (JPL) who manage the program for the National Aeronautics and Space Administration, are being accomplished by Nortronics Hawthorne, under the guidance of Bill Armstrong, MM '69 program manager.

Nortronics' basic mission in the execution of this $5 million contract is to assist JPL in the preliminary design; and perform detailed design, development, manufacture and testing of the Engineering Mechanics Subsystems.

The various parcels in the subcontract package—delivery of which will be completed by the end of March—include solar panel structural assemblies and their deployment mechanisms, both high and low-gain antennas, superstructures, temperature control louver assemblies, cable troughs, and solar panel cruise, and low-gain antenna vibration dampers. These are held to the launch vehicle's mounting platform by separation and release mechanisms, also part of Nortronics' responsibility, as are the basic electronic equipment chassis.

But the most fascinating part of the whole MM '69 work here at Nortronics is that the weeks, months, and years of study, planning, and development converge on one brief interval in time. This particular MM '69 spacecraft must be launched on its five-and-one-half month journey in the waning days of February or during March 1969, or not be launched at all.

It is truly a once-in-a-lifetime opportunity, resulting from the fact that the circumstances and conditions which dictate the spacecraft design—such as the position of Mars in relationship to Earth and the Sun—will not recur for about 25 months, and by then a different state of the art of spacecraft technology will prevail.

The very placement and position of components in and on the octagon are oriented only to the late February-March 1969 launch. If the shot were scheduled for any other time, engineers would have to reconsider—perhaps alter—the position of the solar panels, the alignment of the high-gain antenna, the design of the temperature control louvers, or the placement of sun and star sensors.

(See MARINER, page 6)

OMEGA PROGRESS CONTINUES

Production by Nortronics Hawthorne of 140 OMEGA navigation receivers, under a Department of Defense contract issued last fall, is progressing according to schedule and will be completed for delivery to the U.S. Navy late this year.

The program is significant because it has established Nortronics as major supplier of shipborne OMEGA equipment in addition to the already established stellar and Doppler-inertial navigation systems for aircraft use.

Furthermore, according to Karl McCready, Nortronics project manager for the OMEGA Program, "with only four months past since the award of the contract, the engineering model has been operating for over a month, and from all indications our team, led by Vic Moore, project engineer, has done an excellent engineering job."

OMEGA, which has been under development by Nortronics since the former Marine Equipment Department at Needham undertook the project in 1962, is an all-weather, low-frequency, general purpose navigational aid. OMEGA systems can provide navigation for aircraft, ships, and submerged submarines, in addition to continuously providing a position to a navigator in any weather. Operation of the receiver is quick, simple, and reliable.

OMEGA has a potential of providing continuous worldwide position information, accurate to one mile during the daytime and two miles at night.

Blood Donors Sought For Anaheim Drive

As a last-minute reminder, the Red Cross blood donor day is now in progress at Nortronics' Anaheim Facility in the southwest corner of the Y-12 training classroom.

Donors may contribute to the annual drive today until 4:30 p.m. at the six-bed donor station. Contributions may be credited to the Northrop group account or to one's personal account. Northrop employees and their immediate families may draw from the group account.

Those who failed to sign up for an appointment with their organization clerk will be accepted as time and space permit.

Goal for the day is 200 pints.

Transportation will be provided for donors from buildings Y-41 and Y-42.

Nortronics Golf Tournament Winners Named

Results are in from the 18-hole Nortronics Elkins Ranch golf tournament, and 10 winners have shared honors in three flights and two special categories, according to Dave Krieghoff, NRC golf commissioner.

Bill Deneen registered the best game net of 70, with Virg Wilson's 73 the best low gross.

First flight champ was Dave Rice with a 76, followed by Ray Jackson and Bob Marsh shooting 78 and 79 respectively.

Leading the second flight was Dana Vigo, who fired a 75, knocking off Bob Sadil and Jim Dower, who tied with 80's.

Third flight leader with a 72 was Bill O'Toole, who bettered the identical 77's shot by Tony Piccirello and Pat Angst.

The next tournament outing is set for Saturday, February 17, at Green River Golf Club in Corona. Entry fees are $5 and are now being accepted. Starting times begin at 11 a.m.

ON C-5 PROGRAM

'Big Nickel' Helps Keep Costs Down

Three Nortronics employees whose performance has enabled costs to be reduced on the C-5 Program have been designated recipients of the Lockheed Big Nickel award.

They are Marie Parga, John M. Espinosa and James E. Rheins.

The Big Nickel is actually a silver dollar-sized presentation coin, specially struck in bright nickel alloy on consignment from The Lockheed-Georgia Company, the prime C-5 contractor.

Big Nickel awards are limited only to the extent that an employee's money-saving imagination and ingenuity is limited. But they are not tendered lightly. Since incorporating the Big Nickel into the Nortronics cost reduction program late last October, only the three have been awarded. More are scheduled for presentation during February.

The concept of the Big Nickel awards originated with John P. McCarthy, director of Materiel and manager of C-5 Subcontracts at Lockheed's Marietta facility. It occurred to Mr. McCarthy that economy and cost reduction on a billion dollar program like the C-5 really begins by making every nickel count.

So, the idea of the Big Nickel award was developed to emphasize that a "big nickel" is one that is made to do the work of a dollar through ingenuity, care, thoughtfulness, and the application of professional ability.

"Every last nickel has got to buy its share of the C-5 in order that this airplane can be competitively priced," stressed Mr. McCarthy. "When our customer, the United States Air Force, decides he is going to need more planes, he can choose C-5's," he continued, "because they perform, because they can be delivered on schedule, and because they are priced right — priced attractively —so that it just makes good sense to save the taxpayer's money by buying C-5's."

Meanwhile, in Hawthorne, the Nortronics Navigation department is busy accomplishing its own cost reduction program, of which the Big Nickel is now a part. Ross Miller, vice president and manager of the Navigation department says: "C-5 cost reduction is the number one job of our entire Navigation department team. Only if each individual team member does his part can we meet our targets. My congratulations to the Big Nickel winners for their above-the-ordinary contributions. I know many more Big Nickel winners are in the offing."

A NICKEL FOR HIS THOUGHTS — that's what James E. Rheins (left) of Nortronics' Navigation department Computer Test unit receives from A. B. Lipscomb, director of Product Integrity. The recognition medal is one of the first Lockheed Big Nickel Awards presented to Nortronics personnel who contribute significantly to C-5 cost reduction. Mr. Rheins also received a Nortronics cash award for his suggestion of a new connector and guide pin tool now in use in Manufacturing.

Northrop Aids Chile In Air Travel Study

The technical, economic and management expertise of Northrop's Organization for Development Assistance Programs (ORDAP) has been blended with a significant accomplishment in computer programming by Northrop Data Processing to complete a *tour de force* in planning an air transportation program on the national level.

The opportunity for Northrop to apply its advanced technology was provided by the Republic of Chile through its Junta de Aeronautica Civil (JAC), the Chilean equivalent of the U.S. Civil Aeronautics Board. The analysis of Chilean air transportation, from the present through 1972, was conducted by a joint U.S.-Chilean team under the direction of the ORDAP staff, headed by James L. Taylor.

In one of two major developments by Northrop during the contracted study, the ORDAP team was able to program for its 360/65 computer system a complete physical description of the South American nation, the characteristics of 56 aircraft models, all major components of the present air transportation system in Chile, plus a description of 195 urban centers in Chile and throughout the world with respect to their socioeconomic and air traffic characteristics.

Nearly 20,000 IBM cards were required to cover these data and the computer programs.

"With this body of information stored in its memory, the computer was able to predict the fuel and cost performance of each aircraft studied, on both national and international routes," according to Arnold Kent, ORDAP's associate director for Latin America and manager of the Chile study.

"In effect, the computer simulated thousands of hypothetical flights, considering such details as runway limitations, local fuel prices, and expected winds at the altitudes flown by jets," he added.

With the methods provided by Northop, JAC can plan a comprehensive international or national route system and determine rapidly whether it will be economically feasible, and what the country must provide in terms of equipment and facilities.

The second equally significant advancement concerned the development of techniques for predicting what Chile's future air cargo and passenger demands would be for the period 1968-1972.

Again the computer was relied upon to compress years of manual computational work into a few minutes.

The complete package of documents supporting the Northrop study would reach the top of a six-story building if placed in a single stack.

Most of the research was performed in Santiago under the guidance of Neils E. Sorensen-Viale, a Northrop economist-engineer fluent in Spanish. Other Northrop members of the Santiago contingent were Bernard daSilva and Stuart Laurie of Norair's Systems Evaluation section, and Kenneth Tuttle of Northrop Data Processing. Four Chilean employees of JAC rounded out the team.

ORDAP IN CHILE — Arnold Kent (center), ORDAP's associate director for Latin America, is greeted at airport in Santiago, Chile, by Neils Sorensen-Viale (left), ORDAP's program director of Santiago, and Commandante Manuel Rosas, officer in charge of Pudahuel International Airport, as he arrived to participate in air transportation planning study for Chile's Junta de Aeronautica Civil.

Discount Tickets Available for Lakers, Kings

Northrop Recreation Clubs have obtained 300 reserved seats for each of two outstanding sports events at the beautiful new Forum in Inglewood.

Those tickets are now available at discount rates through Personnel Activities outlets at all Northrop facilities.

Regular $4 tickets for the February 12 (8 p.m.) hockey game between the Los Angeles Kings and the Toronto Maple Leafs are available for $2.90 each.

And regular $3.50 tickets for the February 21 (8 p.m.) basketball game between the Los Angeles Lakers and the Boston Celtics are available at $2.50 each.

NASA's Thompson Elected by AIAA

Floyd L. Thompson, director of the National Aeronautics and Space Administration's Langley Research Center, has been elected president of the American Institute of Aeronautics and Astronautics.

Many Northrop engineers and scientists are members of the AIAA. Senior Vice President Richard E. Horner of Northrop is a past president of the 33,000-member professional society.

Carolina Earns Defense Agency Commendation

Northrop Carolina has been commended by the Defense Supply Agency for its many achievements in 1967.

In a letter addressed to President George Douglas of Northrop Carolina, Colonel Loren P. Murray, director of the Defense Contract Administration Services for the Atlanta region, said:

"The many changes and improvements in your management and production areas, together with diligent and sustained effort, have enabled Northrop Carolina to deliver a quality product on schedule. These efforts have been readily recognized and most appreciated by this Defense Contract Administration Services Region."

In announcing receipt of the letter of commendation, Mr. Douglas declared the performance cited "is the result of the efforts of a great many people here at Northrop Carolina."

Sullivan Named Chairman Of Marine Resource Panel

Dr George H. Sullivan, director of Life Sciences at Northrop Nortronics, will be chairman of a panel discussion Friday on marine resources development.

The panel will be part of an all-day symposium at the Ambassador Hotel in Los Angeles, sponsored by the University of Southern California.

Dr. Sullivan is a member of President Johnson's National Commission on Marine Science, Engineering and Resources. All members of the National Commission have been invited, along with nearly 200 presidents and board chairmen of ocean-oriented business and investment firms, the governors of five western states, and legislators on the state and national level.

"Much has been written and said about the wealth of ocean resources — minerals, petroleum, even food," said USC's Dr. Richard Tibby, general chairman of the symposium. "One of the roles of this meeting will be to explore the feasibility of such resource development; what reserves of manpower, management, and money can be applied; and the role of the government in such an effort."

The morning symposium session, to be chaired by Dr. Sullivan, will explore marine science requirements and resources. The afternoon panel will investigate investment and the role of government. USC's Dr. Robert R. Dockson will be chairman.

H. B. Dean To Head New Jersey Office

Glenn R. Lord, Corporate vice president of Marketing, has announced the establishment of a Northrop district office in northern New Jersey, to be called the Fort Monmouth District Office.

H. B. Dean has been appointed regional representative, and will head the office. He will report to J. B. Meagher, manager of the Northrop Northeast Regional Office in Boston.

BACK BY CHRISTMAS

The Aquarius—On to the South Pacific

Last week a 42-foot yawl, the Aquarius, slipped out of Los Angeles Harbor and sailed southward on the first leg of a voyage many dream of making, but few manage.

Tides, winds and "Dame Fortune" willing, the Aquarius will continue south to Ecuador, cross the Pacific to the Marquis Islands, tour the fabled South Pacific Islands, visit Hawaii, then return to Los Angeles in time for Christmas 1968.

Tom Hunt, formerly of Norair's Cost Estimating organization, is the skipper-owner.

His wife, Roberta, is the cook. His deck crew is made up of three 18-year-old boys. His son, Rollie, Howard Johnson, son of Howard Johnson, sr., of 747 Planning and Randy Anderson, son of Loren Anderson, of Major Jigs.

The voyage is the realization of a lifetime dream for the Hunts, the Aquarius is a product of their skills.

S. S. Crocker, noted marine designer, created the Aquarius design which was, in turn, built by the Hunt family over a five-year period. It represents more than 4,000 man-hours of labor logged on weekends, evenings and holidays.

The Aquarius was built for deep water sailing with this voyage foremost in the minds of the workers. It has all of the standard radio and navigation equipment found on boats of its size and class. It has an auxiliary engine with fuel for 1,200 miles of powered cruising. However, the three sails carried on the two masts (800 feet) will provide the primary propulsion system. There is an 80-gallon fresh water tank with provisions for trapping rain water. And a 24-volt battery system is available for refrigeration and electrical power.

Provisions packed aboard are sufficient for one year and will be augmented by purchases at ports of call. The Hunts canned 400 jars of meats and sauces and laid in 500 pounds of flour, 700 pounds of sugar, powdered milk to make 185 gallons and powdered eggs equivalent to 250 dozens, plus canned vegetables in abundance.

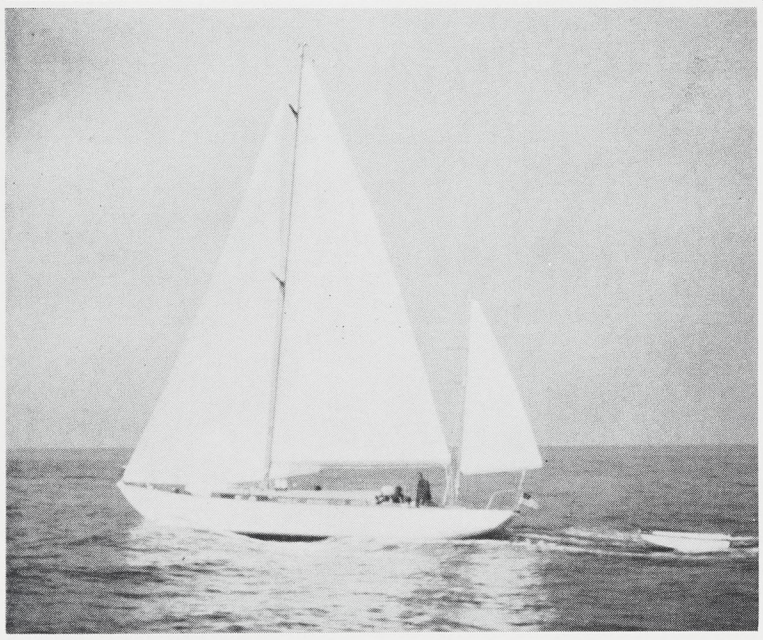
The Aquarius was launched last April and has made a number of shakedown cruises up and down the California coast.

The Hunts have talked to many sailing enthusiasts and read every book on navigation and sailing they could find to add to their knowledge of sailing, gained over the past 12 years.

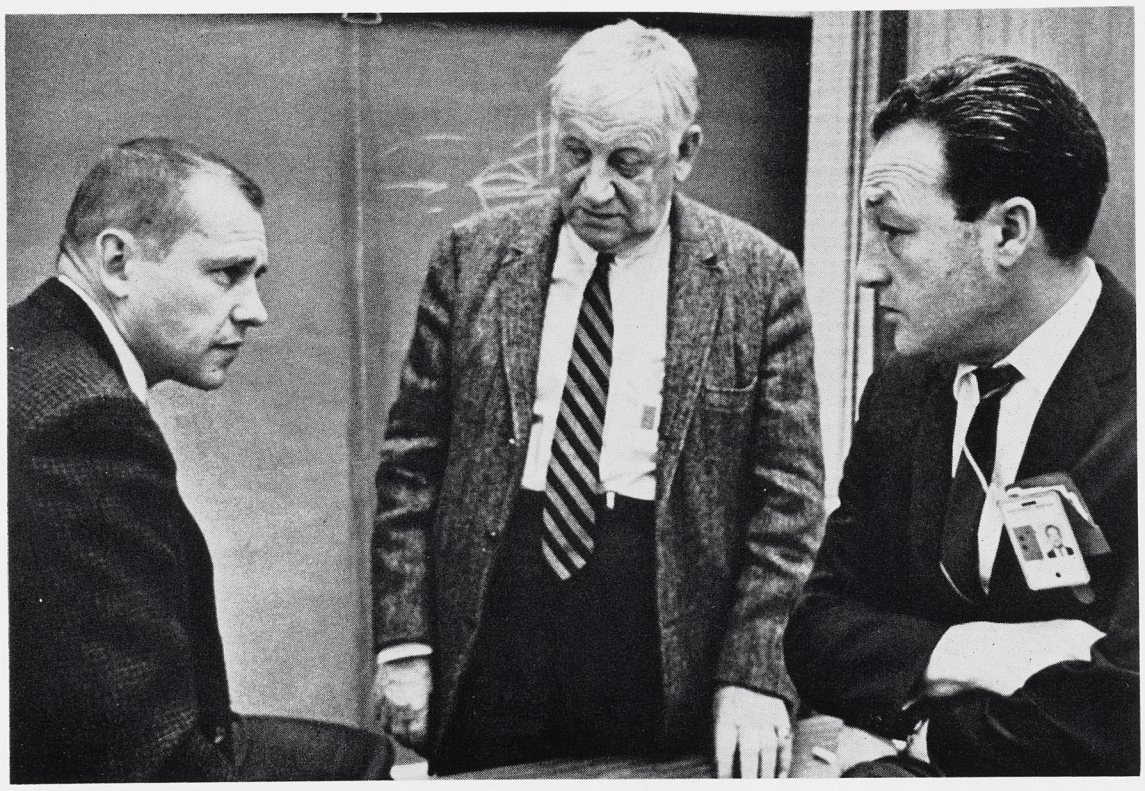
"We know we will make mistakes, but we feel we are equipped to survive," Mr. Hunt says. "We are departing with nothing but enthusiasm."

While the Aquarius will put in at major ports, such as Acapulco, just for a visit, the crew is especially interested in getting off the beaten path, in visiting out-of-the-way places.

This is the primary purpose of the voyage of the Aquarius, circa 1968.



THE AQUARIUS—Trailing a small dinghy behind it, the 42-foot Aquarius leaves Los Angeles Harbor on a shakedown cruise. The yawl left Los Angeles last week for a trip to South America, Hawaii and the South Pacific. It carries a crew of five.



DISCUSSING THE BOOM — Tony Plattner (left), technical editor of Aviation Week magazine, discusses sonic boom theories with Dr. Gustav Andrew (center) and Maurice S. Cahn of Northrop. Mr. Cahn and Dr. Andrew presented an AIAA paper in New York which described fundamental research on one possible approach to diminishing the sonic boom.

Sonic Boom Studies Outlined by Engineers

The forward expulsion of electricity by supersonic aircraft could possibly diminish the sonic boom, two Northrop engineers said last week at the sixth Aerospace Sciences Meeting of the American Institute of Aeronautics and Astronautics.

In a paper delivered to the AIAA's Atmospheric Flight Mechanics conference in New York, Maurice S. Cahn and Dr. Gustav M. Andrew of Norair described experiments which indicate that it may be possible to alter the flow of air around an airplane with electrostatic forces.

Sonic booms occur when air is suddenly deflected by aircraft moving faster than the speed of sound, creating shock waves. Subsonic aircraft do not cause booms because they exert a pressure disturbance in the air which, traveling at the speed of sound, "alerts" the air ahead that something is coming, causing the air to alter its flow.

Supersonic aircraft also create a pressure disturbance but because the aircraft is moving faster than the signals from these pressure disturbances, the air ahead is not alerted in time to alter its flow. The abrupt changes generated in the air as the aircraft approaches are the cause of booms.

If an electrical voltage could be applied to a supersonic airplane, or at least to its forward part, the oncoming air particles which are likewise charged would anticipate the presence of the aircraft because of the well-known electrostatic repulsion between ions of a like charge, the engineers determined.

As a result of this repulsion, particles of air would change their path and flow smoothly around the aircraft as in subsonic flight or at least make the sudden piling up of air against the aircraft less abrupt. Consequently, the shock wave possibly could either be eliminated or greatly reduced, the researchers said.

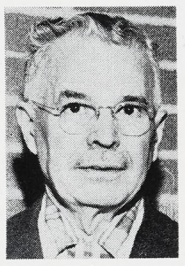
They described their work to date as fundamental aerodynamic research. They have given the name "electroaerodynamics" to their current research.

Although small-scale wind tunnel and liquid surface tests substantiated certain basic assumptions of the theory, the engineers emphasized that further research, including tests in a wind tunnel, would be required before any conclusive data could be obtained.

25-Year Award Not Enough for 38-Year Man

Officials at Northrop Carolina had something of a problem when it became time to honor Herbert C. Heineman with a service award pin.

The situation was that Mr. Heineman, director of Metrology



Mr. Heineman

Mr. Sorton

and Laboratory Services, has more than 38 years of service with the company and its predecessors, while Northrop to date only offers a 25-year pin.

Mr. Heineman joined Celanese Corporation in August 1929, and became chief chemist. In November 1959, the company became Amcel Propulsion Company. In 1965, when Northrop acquired Amcel, Mr. Heineman became a part of Northrop Carolina.

The problem was solved when George Douglas, Northrop Carolina president, presented Mr. Heineman with a 25-year pin and a 10-year pin.

As one official pointed out, the dilemma may return in 18 months. At that time, Mr. Heineman will have completed 40 years of service.

Mr. Douglas also honored John Sorton, director of Financial Forecasts and Indirect Budgets, who joined Celanese in July 1939, and has more than 28 years of uninterrupted service.

THREE GENERATIONS

The Haizlips and Northrop

Fathers and sons, and even mothers and daughters, working at the same division are not uncommon among Northrop Corporation personnel. However, the Haizlip family may hold some record along family - connection lines.

Three generations of Haizlips have served Northrop, including two generations currently employed.

Confusing the matter is the fact each of the three male members answers to the name of Jimmy Haizlip. Only different middle initials set them aside.

Jimmy G. Haizlip (the grandfather) started things when he joined Norair in 1951 where he worked in Service Publications until his retirement in 1961. His wife, Mary, was also a Northrop employee.

Mr. Haizlip is a noted pilot who began flying in 1917. In 1926, when the United States began issuing licenses to pilots, Mr. Haizlip received license 289. He compiled a distinguished record as an engineering test pilot with major aerospace firms prior to joining Northrop.

Jimmy H. Haizlip (the father) came to Northrop in 1952 and is currently an engineering specialist in the Nortronics DSSP organization. His wife, Audrey, was a Norair Engineering employee.

Jimmy W. Haizlip (the grandson and son) joined Norair 18 months ago and is currently in Timekeeping.

And that's not all. Seventeen-year-old Michael Haizlip (a grandson, son and brother) is studying engineering at El Camino College and would like to continue the Haizlip tradition at Northrop once he graduates.

Aspen Ski Trip Deadline Set

Tomorrow (February 1) is the deadline for reserving a place on an all-Northrop Travel Club excursion to Aspen, Colorado, departing March 30 and returning April 6.

The $192.50 per person price includes round trip air transportation, seven nights' lodging with continental breakfast, and a six-day ski lift ticket.

Contact Personnel Activities for information.

P. R. Manager Named by Page

Page Communications Engineers, Northrop's subsidiary in Washington, D.C., has appointed Mrs. Harriett Manley manager of Advertising, Sales Promotion and Public Relations.

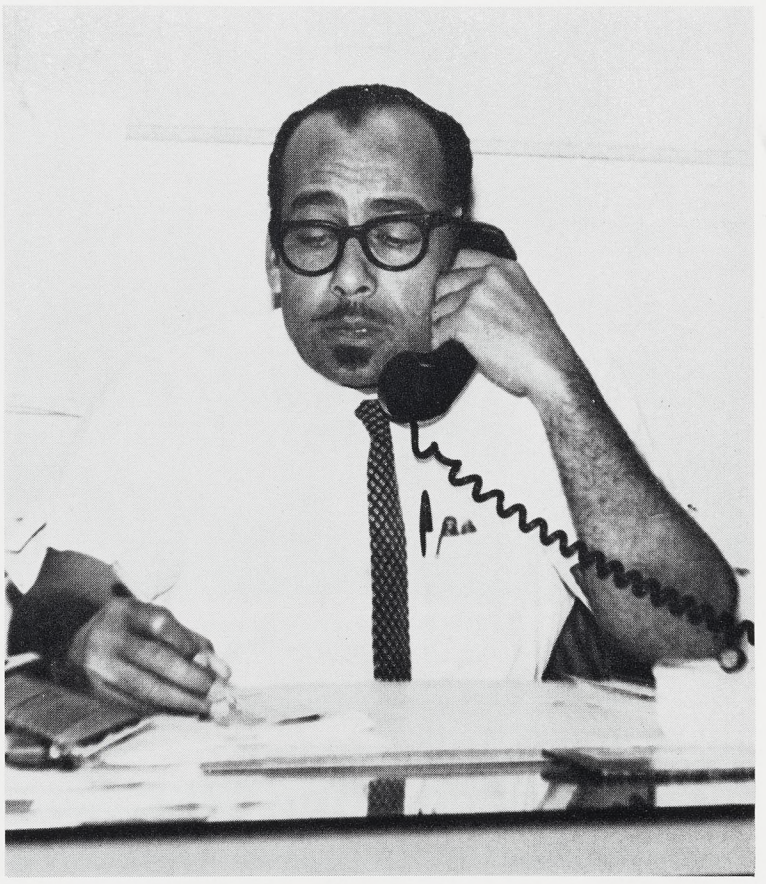
The appointment was announced by W. E. Sutter, Page's vice president and senior director of Marketing.

Mrs. Manley is a member of the Armed Forces Communications and Electronics Association, and is executive secretary of the group's Washington Chapter.

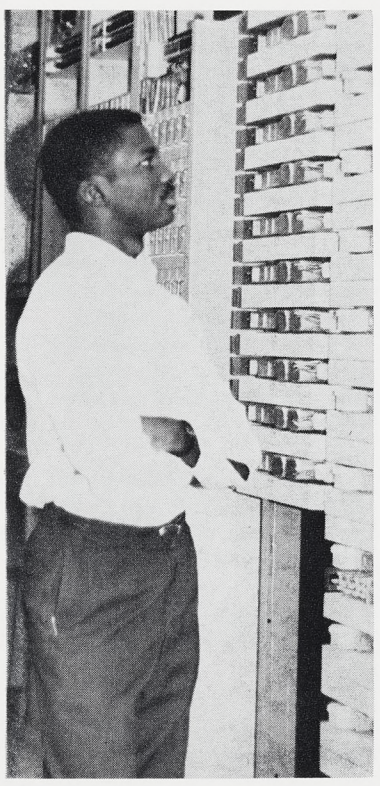
TRYING FOR SIZE—the cockpit of an F-5 fighter at Norair is Chaplain (Captain) Clifford J. Stevens, USAF, as Colonel Richard McLaughlin, USAF, and Norair's Dan O'Halloran look on. The colonel is the brother of Norair's Jerry McLaughlin. Chaplain Stevens is an author and noted flight enthusiast, having flown at Mach II during his career.

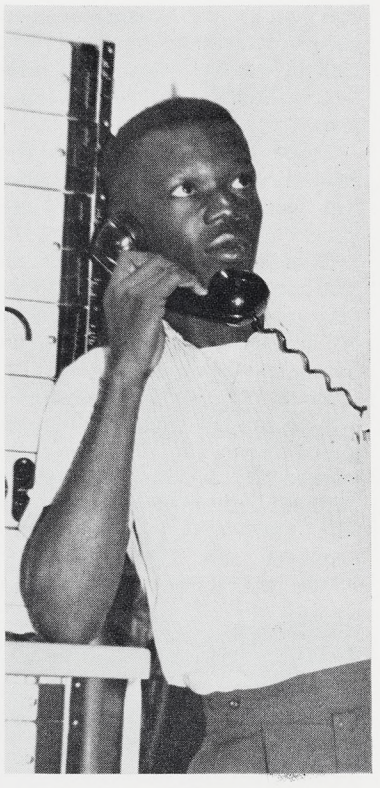
MORE THAN $3 MILLION—Northrop Welfare Coordinator Marie Tully presents a check to John Lowry, president of AID-United Givers. Northrop employees have pledged $329,000 to charity in the current fiscal year, bringing total contributions since 1955 to more than $3.2 million. AID-United Givers distributes the funds to charitable institutions in more than 200 communities throughout the United States where Northrop employees live.

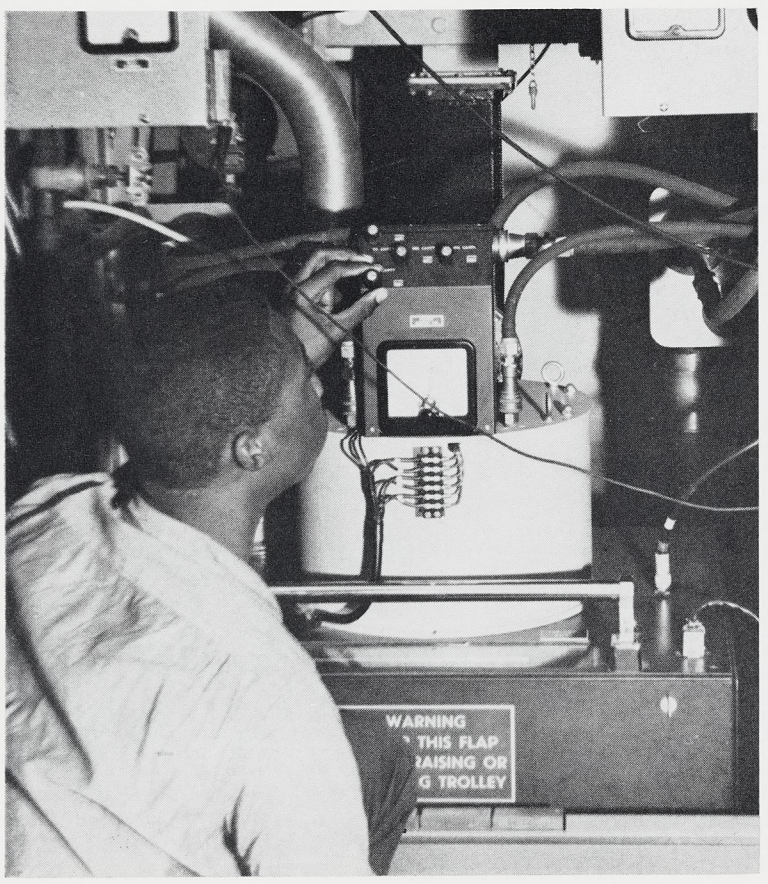
Page, BATELCO Link Bahamas, U.S.



PAGE IN THE BAHAMAS—Page Communications, working with the Bahamas Telecommunications Corporation (BATELCO), has expedited the flow of telephone traffic between the islands and the U.S. mainland. Page designed and installed troposcatter links and toll switching facilities, and increased channel facilities. These pictures tell the story. Above, Page installer S. Young (right) works with BATELCO technicians. At right, A. B. Sherman of BATELCO makes arrangements for the switchover to the new equipment. In the other photos, Page and BATELCO personnel work together to test, inspect and activate the new system.







Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

For Sale

Snowmobile, 1967 Polaris Colt 140, 15 h.p. Hirth eng., 1½ hrs. total time, with trailer, $900; $800 w/out. 758-9182. A

Dodge, 1960 Dart, r/h, auto., 4-dr. sedan, $350. 375-7401. A

Mercury, 1967 Cougar, p/s, p/b, 289 cu. in. V-8 eng., 6,000 miles, $800 & take over $102.06 mo. pymts., $3,100 approx. bal., 373-4074. A

Parts Auto, 1957 Metro, no eng., $50. 714-526-2962. A

Camper, 1966 Volkswagen, push button radio, $2,695. 674-1825. A

Chevrolet, 1960 Bel Air, sedan, $300. 839-5772. A

Chevrolet 1965 Malibu SS, V8 auto., p/b, p/s, $1,850. 371-4560. A

Oldsmobile 88, 1955 2-dr. h/top, body damaged, B&M Hydro stick, many extras, $175. 672-7601. A

Corvette, 1965 coupe, 425 h.p. eng., 4-spd., pos. 4:11 rear end, side-mounted exhaust sys., disc power brakes, $3,200. 754-7861. A

Ford, 1959 Fairlane, $150. 714-538-3495. A

Mustang, 1966, V-8, 3-spd., 16,000 miles, $1,700. 375-0165. A

Mercury, 1961, p/s, p/b, r/h, factory air, $350. 645-3382. A

Front End, for 1964 Plymouth, alum., less hood, $75. 677-5285. A

Chevelle, 1966 Malibu 2-dr., 220 h.p., 3.35 positraction rear end, 4-spd., many extras, $2,300. 371-9925. A

Buick, 1955, r/h, p/s, auto. trans., $175. 670-2762. A

Ford, 1955 4-dr., $125. 676-5928. A

Pontiac, Bonneville, 1960 2-dr. h/top, r/h, air, $550. 672-1036. A

Renault Dauphine, 1961, 37,000 miles, r/h, $250. 714-842-8449. A

Austin Healey, w/h/top, $500. 677-2752. A

Cadillac, 1965 coupe De Ville, full power & air cond., $3,500. 328-6863. A

Corvair Monza, 1961, auto. trans., new tires & brakes, $495. 865-7776. A

Exhaust System, complete, from 1966 VW 1300, $20. 375-8536. A

Television Set, 19″ all-channel, w/rollabout stand & RCA Stratopower antenna, $60. 675-8829. A

Chevelle, 1965 Malibu, 2-dr. h/top, V-8, auto., p/s, $1,450. 714-539-2518. A

Plymouth, 1962 Fury, 4-dr. h/top, auto. trans., p/s, $695. 714-897-9911. A

Drill Press, Craftsman Stand, w/½″ chuck, ½ h.p. 1750 rpm motor & stand, $75. 714-528-7636. A

Stove, Magic Chef, gas, $25. 714-672-5665. A

Laundry Tray, cast iron porcelain finish, $10. 323-8797. A

Lawnmower, Sears, reel-type, power, $35. 882-0761. A

Slide Projector, Leitz, Pradovit, $90. 672-7167. A

Surfboard, Bing, custom, 9′4″, $65. 675-2331.

House, 7-room, 1,750 sq. ft. panelled fam. rm. w/stone fireplace, 2 baths, 5 min. from Northrop, $27,850. 321-6973. A

Dryer, gas, $60. 674-6227. A

Stove, gas, $35. 326-5448. A

House, 3-bdrm., cpts., dps., dble. gar., new paint, near Northrop, no down G.I., $23,950. 327-6704. A

Amplifiers, Fender-Jazzmaster, Silvertone & Jazz brass bassman, $750. 714-830-2835. A

House, 4-bdrm., 1½ baths, bltins, block wall fence, dble. attach. gar., used-brick fireplace, 30 min. from Norair, assume 5¼% FHA loan, $22,500. 714-897-9075. A

Desk, secretarial, left-hand, wood w/post chair, $20. 633-2395. A

Lens, 85-210 mm f:4.8 sun zoom, T-mount for SLR, $75. 835-3869. A

Slip Lot, Salton Sea, for house & sep. boat dock on channel, near yacht club, $7,100. 714-535-1694. A

Porsche, 1955 Speedster 1500, new paint, $1,499. 325-1479. A

TV, 1960 21″ Admiral console, French provincial cabinet, $35. 679-6318. A

Suitcase, by Atlantic, blackwatch plaid, 26x 21x9, plus carry-on bag, $10. 477-8791. A

Amplifier, stereo & tuner, Heathkit models AJ-41 & AA-100, $198.50. 434-7791. A

Camera, 35mm Argus C-3, $25. 377-6435. A

TV, 21″ RCA table model & stand, $30. 371-8395. A

Exercising Machine, Stauffer, $100. 679-5610.

Washer, automatic, $15. Box 201. A

Motorcycle, 1966 Bridgestone, 90 Mountaineer, 88cc, rear saddle & chrome rack, $250. 679-2759. A

For Sale

Honda, 1966 Superhawk, 305 cc, many extras, $550. 372-0313. A

Shotgun Shells, 12 gauge, paper, fired once, .02¢ ea. 327-4585. A

Train Layout, H.O., switches, bridges, engs., cars, $15. 675-8173. A

Rugs, pads, 10x27, 12x12, 8x8, 6x5, 12x15, light beige, wool, 12x15, blue-gray, $50. 597-2260. A

Ski Poles, tapered steel, 5′9″, $7.50. 376-5810. A

Record Tree, gold, hangers for 100 albums, $20. 644-1213. A

Roaster Oven, Westinghouse, baking dishes inc., $15. 867-4362. A

Camera, 8 mm Minolta movie w/case, zoom lens, f/1.8, & filter, $70. 714-635-8160. A

Slot Car Outfit, H.O. gauge, $8. 379-5690. A

TV-Stereo combination, $150. 329-6848. A

Buffet, mahogany, 20″x60″, 2 drawers, 2 cabinets, $35. 328-6839. A

R.C. Equipment, P.C.S. proportional radio, 5 channels, Sr. Falcon w/super tigre, 60 r.r. $295. 673-3251. A

Piano, upright, mirror top, mahogany finish, $150. 848-1432. A

Power Mower, 20″ reel-type, recently o/hauled, adjusted & sharpened, $40. 326-5731.

Table Saw, 8″, band saw, belt & disc sander, metal engine lathe, all w/motors, $200. 325-3452. A

Trail Bike, 1965 Mustang, front & rear susp., 4-spd., $250. 676-8557. A

Ski Boots, men's size 8½, $20. 429-6277, 714-536-4857. A

Tires & wheels, 3 General 5.70 / 5.00-8 mounted on 4-hole wheels, $15 ea. 325-2292.

Baby Chair, rocker, walker, bouncer comb., $2. 323-4257. A

Television, Packard Bell, 23″ console, b&w, $50. 372-3287. A

Exerciser, $40. 714-847-4871. A

Top, canvas, w/adjustable alum. frame for Chevrolet Fleetside pickup, $35. 676-7357. A

Acreage, Lancaster area, 20 acres, ½-mile so. of Antelope Valley Jr. College, low dn. $5,500 acre. 805-948-1171, 805-947-8389. A

House, 3-bdrm., 2 baths, corner lot, fenced backyard, patio, $19,500. 805-498-2365. A

Shelby, 1967 GT 500, p/s, p/b, auto. trans., $4,300. 675-1365. A

House, 1-bdrm., fireplace, 2-car gar., on 2 R-1 lots, terms, $21,500. 374-6898. A

Dishwasher, portable, G.E. Mobile Maid, 4 yrs. old, $85. 545-3941. A

Mattress, never used, medium firm, $30. 672-0426. A

Record Player, stereo, Mustang solid-state, 2 mos. old, $35. 329-6949. A

Typewriter, $30. 714-539-2098. A

Honda, CL160, 1966, $350. 373-3669. A

Pups, collie, AKC, show stock, $125. 370-4475. A

Casement Windows, steel w/glass, 2 39″ wide x 75″ high, 2 39″ wide x 49″ high & 4 24″ wide x 38″ high w/swing-out windows, $59 or sell sep. 328-1520. A

Box Spring, mattress & frame, single, $20. 377-4943. A

Bicycle, girl's standard, $12. 328-3306. A

Trailer, ¼-ton, spare tire, $75. 377-3642. A

Trailer Hitch, Mustang, never used, $10. 374-3164. A

SCUBA Diving Gear, dble. 44 cu. ft. tank, single hose regulator, $140. 370-4315. A

Range, Wedgewood, gas, $40. 394-0402. A

Oldsmobile 88, 1957 h/top Holiday, auto. trans., $220. 805-495-8178. A

Chevrolet, 1960 Biscayne, V-8, 3-spd., 2-dr., $150. 677-3920. A

Ring Set, engagement & wedding, $200. 376-6182. A

Movie Camera, 8mm, Revere turret, telephoto, wide angle w/case, projector, editor & screen, $67. 325-5838. A

Ice Skates, girl's, white, size 5½, Canadian make, $10. 375-7038. A

Dinette Set, 30″x48″ table, leaf, 4 chairs, $25. 714-828-0591. A

Stereo Components, tuner, amplifier, turn table, speakers, $100. 635-2648. A

Piper Cub J3, 1946, 600 hrs. s.m.o.h., new ceconite covering, radio w/omni directional, $1,950. 379-0324. A

Home, 3-bdrm., 1¾ baths, custom-built, cpts., dps., many deluxe bltin features, fenced rear yard, 2 miles from Plant I. $28,500. 675-8829. A

Acreage, 5 acres, near Willow Springs, on good road, $35 dn., $35 mo. inc. 6% interest, $3,500. 378-1026. A

Ford, 1954, 8-cyl., 2-dr., new bat., voltage reg. & generator, $150. 677-6797. A

Piano, upright, $175. 675-3541. A

Hair Dryer, professional, $40. 675-1094. A

Culver Cadet LFA, 90 h.p. Franklin eng., 400 hrs. since m.o.h., recovered w/ceconite, $2,700. 674-5476. A

Lot, ½ acre bldg. site in Agoura, horses o.k., city water, electricity & phones, $8,500. 783-8271. A

Mustang, 1966 h/top, 6-cyl., r/h, Cruise-o-matic, $1,600. 676-3388. A

Xylophone, Deagan, $125. 329-5364. A

Stove, gas, 4 burners, oven & broiler w/ rotisserie, $35. Box 202. A

Pantograph, 30″ professional unit, wood case, $15. 379-3487. A

Motorcycle, 1965 Greeves, 250 cc, new upper end, $400. 325-9033. A

For Sale

House, in Palmdale, on 62x145′ lot, 5-bdrm. & fam. rm., 1¾ baths, h/wood flrs., lge. patio, dble. gar., fenced back yd., 4½% loan, 5 min. to Norair Plant 42, $18,500. 805-947-6754. A

Television, Magnavox Low Boy, 23″, b&w, mahogany cabinet, $50. 644-5852. A

Pups, airedale, $125. 698-2785. A

Tape Recorder, Concord stereo 880, 2 microphones, speakers, other features, $200. 325-3724. A

Truck, Chevrolet, ½-ton, w/Stahl service body, $995. 564-2263. A

House, Palmdale, 3-bdrm., 1½ baths, chain link fence, det. gar., G.I. loan, $12,750. 325-3057. A

Organ, Lowrey Holiday, $500. 675-3931. A

Acreage, 2½-acre parcel, Antelope Valley, $1,500 down, $50 mo., 6% interest, $5,500. 375-7130. A

Guitar, elec., amplifier & leather carrying case, $70. 639-5575. A

T-Bird, 1955, r/h, 3-spd., overdrive trans., 406 eng., $1,200. 371-5363. A

Station Wagon, 1967 Ford 6-pass. Country Sedan, 390 2V eng., a/c, p/s, p/b, auto., $3,175. 324-2992. A

Ford, 1961 Falcon 2-dr. sedan, good tires, $275. 372-1013. A

Yamaha, 1963, 50 cc, $125. 323-9598. A

Mercury, 1960 Montclair, p/s, p/b, r/h, air cond., trans. o/hauled, $400. 372-1205. A

Pontiac, 1961 Bonneville 2-dr. h/top, full power, air cond., $750. 545-5023. A

Range, Maytag, gas, $50. 329-7447. A

Refrigerator, Philco, $15. 377-1075. A

Tires, Goodyear Blue Streaks, 5, 5.00x12, wet or dry, 3 5.00x12 tubes, 4 12″ whls., 5″ wide, $100. 370-3396. A

Formal, floor-length, deep-turquoise, empire style, matching coat, size 13, $25. Box 203.

Stole, mink, natural autumn-haze, cowl-collared w/extra-long panels, $200. 714-533-4071. A

Aquarium, 20-gal. tank, motor, filter, other access., $25. 329-6728. A

Dishwasher, auto., Wasteking, under counter model, $30. 675-0788. A

Acreage, 1.25 acres, Antelope Valley, close to Lancaster & Edwards AFB, $4,500. 672-4450.

Chevrolet, 1963 Bel Air, 4-dr. sedan, r/h, auto. trans., $795. 378-1531. A

Honda 50, 1963, model 102, $65. 421-1300. A

Dodge, 1956 D-500, all power, $125. 833-9697. A

Dune Buggy, fiberglass, newly built on '61 VW chassis, many extras, $1,600. 370-2876. A

Bed, full size, 80″ long, $30. 675-8068. A

Boat, 16′ open Fleetliner, bait tank, 1955 40 h.p. Mercury motor, trailer, $550. 370-9238. A

Cemetery Lots, 4 in the Eventide Sec. of Green Hills Memorial Park, $400. 376-4677. A

Stove, gas, Wedgewood, 27″ oven & broiler, 4 burner, $60. 321-2848. A

Golf clubs, bag & cart, 4 woods, 8 irons, $75. 869-7760. A

Stove, O'Keefe & Merritt, 2 ovens, 2 broilers, 5 burners, coppertone, 1 yr. old, $200. 598-3552. A

Ping Pong Table, alum. folding legs, $15. 371-5261. A

House, 4-bdrm., den, 2 baths, on 3 lots, new paint in & out, h/wood floors, $27,500. 379-7660. A

Tape Recorder, stereo, Pentron PR-65, $50. 679-2635. A

Porsche, 1959 convt., recent eng. o/haul, Michelin radial tires, $1,575. 377-8731. A

Refrigerator, Kelvinator, 14 cu. ft., frost-free, $125. 869-9866. A

Wanted to Buy

Station Wagon, good running, late model in good condition. 326-0114. B

Model Train Equipment, American Flyer, S-gauge. 286-3572. A

Exercycle, or similar device, not motorized w / adjustable tension & instruction book. 675-2005. B

Bicycle built for two. 596-9748. B

World Books, set. 670-5990. B

Property in Palos Verdes area, either improved lot, min. ¼ acre or house less than 2 yrs. old, min. 2,500 sq. ft., 4-bdrm. & family rm. 596-0521. B

Volkswagen parts useable for dune buggy, 371-7382. B

Mangle, without heat. 323-8213. B

Rentals Offered

House, 2-bdrm., unfurn., fenced yard, patio, $140. 320-2002. E

Apt, 1-bdrm., unfurn., 2 miles from Norair, gar., $90. 674-0755. E

Cottage, 2-bdrm., redecorated inside & out, $130 mo. unfurn., $155 mo. furn. 823-1910. E

Apt, unfurn., 2-bdrm., enc. gar., adults only, no pets, $125 mo. 676-1985. E

Home, 3-bdrm., 2 baths, dble. gar., lge. backyard, covered patio, fireplace, d/washer, will lease, $185 mo. 714-828-2505. E

Apt, 1-bdrm., near King Harbor, cpts., dps., bltins, gar. w/storage cabinets, $120. 376-9608. E

House, 3-bdrm., 2 baths, enc. patio, cpts., dps., fenced yd., avail. Feb. 19, $200. 377-6458. E

Apt, 1-bdrm., cpts., dps., bltins, stove, refrig., air cond., 20 min. to Norair, $100 mo. 391-7781. E

Rentals Offered

Duplex, unfurn., 2-bdrm., refrig., stove, gar., adults, no pets, avail. Feb. 15, $125 mo. 673-1249. E

Apt, 1-bdrm., bltins, all elec., closed gar., 10 min. to Nortronics PV, 20 min. to Norair, $120 furn.; $105 unfurn. 375-2091, 375-9397. E

House, 2-bdrm., unfurn., utilities pd., 1 block from Norair, $130. 676-5291. E

Apt, 1-bdrm., furn., bltins, 5 min. from Norair, $125 mo. 421-5233. E

Rentals Wanted

Apt, 2-bdrm., unfurn., from $90 to $120, must be near Northrop, on April 1, have 3 children. 845-1651. F

Bachelor sleeping room w/bath privileges. Box 204. F

Child Care Wanted

Child Care, 18 mos. & up. 679-2851. G

Girl, 15 yrs. old, desires babysitting assignments, Westchester, Inglewood area, any evening or weekend, 75¢ hr. 673-4836. G

Personals

Sincere thanks to my friends at Nortronics Hawthorne for their thoughtfulness & generosity during the recent passing of my mother & illness of my sister. JOHN R. DIXON. L

Will do ironing in my home. 672-6060. L

Will board a horse free for several mos., plenty of green grass, Malibu Canyon area near the tunnel. 671-8401. L

My sincere thanks to Pat's many sincere & dear friends at Northrop in the recent loss of my husband, your kindness & love will always be remembered by myself & family. MRS. PAT DOHERTY. L

I wish to express my thanks for the lovely flowers & expressions of sympathy during my recent loss. BARRIE J. YOUNG. L

Toys wanted to be given to orphans & children who have none, will do repair work. 674-2074. L

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

West San Fernando Valley. John Rizzotti, Norair, ext. 2033.

8 a.m. — 4:45 p.m.

Carriagedale Dr. off Harbor Fwy. at Sepulveda & Figueroa, Wilmington. Christine Remedios, Norair, ext. 2965, 835-2272.

Manchester Ave. & Crenshaw Blvd., Inglewood. Can pick up anywhere from 82nd St. along Crenshaw Blvd. Charlotte Woolums, Norair, ext. 1515-1564, 753-7484.

East Whittier or vicinity, Whittier. C. Rosenkranz, Norair, ext. 1022, 696-3467.

Rides Offered

8 a.m. — 4:45 p.m.

East Whittier or vicinity, Whittier. C. Rosenkranz, Norair, ext. 1022, 696-3467.

For Sale or Trade

Corner Lot, ocean view, underground utilities, $1,000 dn., balance at 6%, $22,900 or trade for income property in South Bay area. 377-0146. M

Boat, 12′ alum. cartop-type, 6 h.p. Mercury motor w/spare motor for parts, $150 or trade for boat trailer suitable for 18′ o/board runabout. 714-539-4781. M

Projector, Ampro 16mm sound/silent, $150 or consider trade part value for .22 or .38 pistol, .22 cal rifle or 16-20 ga. shotgun. 941-1865. M

Motorcycle, Yamaha sport 1966, 246 cc, $550 or trade for used Volkswagen. 375-0240. M

Chevrolet, 1957 h/top, $300 or trade for dune buggy in fair condition. 837-0994. M

Volkswagen, 1967 Squareback sedan, 15,000 miles, $2,300 or $600 & take over $65 mo. pymts. or consider older VW in trade. 714-523-2495. M

African Country Orders Page Troposcatter System

The West African Republic of Gabon has become the latest developing nation to contract for a Northrop communications system.

Page Communications Engineers, the Washington - based subsidiary of Northrop Corporation, announced that its Italian subsidiary, Page Europa of Rome, signed a $1.5 million contract with the government of Gabon for a troposcatter radio system.

In the troposcatter technique, radio signals are bounced off the troposphere six miles above the earth. The Gabon system, expected to be operational by December 1969, will link the capital of Libreville with the towns of Lambarene and Mouila.

Under a separate contract now being negotiated, it is expected that the system will be extended into the Congo, to the cities of Dolisie and Brazzaville.

The Gabon project is being financed by the European Development Fund. Radio troposcatter equipment manufactured by the West German firm of AEG-Telefunken will be used.

Northrop's Page Communications Engineers has performed key communications tasks for a number of countries around the world. For the Inter - American Development Bank, it conducted a 10-nation study of South American communications needs.

BLUE RIBBON POSTER—Orange County Junior Achiever Herb Rabbin has won first place in competition with 17 other JA companies in the Point of Purchase Chart contest. He is a member of the ORCO Company, sponsored by Nortronics Anaheim. The winning chart, done entirely free-hand, illustrates the tool rack manufactured and sold by the Orange County achievers.

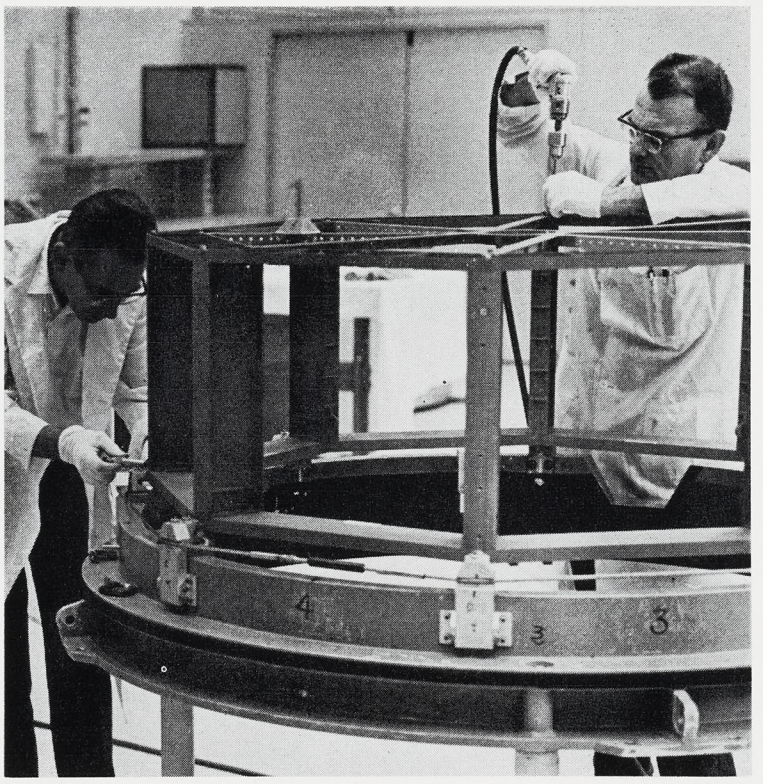
MARINER

(Continued from page 1)

"The program has been operated throughout on a task team basis," says Mr. Armstrong, "for instance, cognizant engineers, lead technicians, test personnel, and responsible Quality Assurance personnel, have been chosen selectively, in many cases from other divisions, for their proficiency. They are assigned to each hardware element to assure individual attention."

But this special attention is not given grudgingly, because the highly proficient, hand-picked team understands fully its mission and critical responsibility, and freely gives the Mariner hardware that kind of treatment which is recognized around the dust-free chambers and clean rooms as "tender loving care," Mr. Armstrong said.

CLEANING THE DISH—Two Mariner Mars '69 antenna specialists carry cleanliness one step further. Maurice Avena (left), technician, and Marty Rojas, the high gain antenna group's acting foreman, clean off the excess epoxy from the back side of the high gain antenna dish. Like all MM '69 components, it too must pass the final "white glove" test.



A FINAL CHECKOUT of the Mariner Mars '69 octagon structure is accomplished by Berlyn Fishburn (left), inspector; and Cortland Heckman, technician. Mr. Fishburn and Mr. Heckman are but two of many qualified and highly proficient personnel who have been hand-picked to assure high quality and strict adherence to tolerances in the Mariner program.

Polaris Depot Gains Navy Certification

A milestone in the progress of Nortronics' Polaris Support Depot was marked this month in Anaheim with a presentation certifying Nortronics as a repair facility for Missile Test and Readiness Equipment (MTRE), Type C, MK-3 and MK-7.

Actual certification occurred last October after almost six years of support depot performance by Nortronics. Nortronics was selected as the site for this effort when the necessity for a west coast repair facility for Polaris MTRE became evident due to the construction, support, and overhaul of fleet ballistic missile submarines on this coast and their deployment in the Pacific.

In making the presentation, Joe Hersch, U.S. Navy Special Projects Administrator in Washington said, "Nortronics personnel, under the leadership of M. A. Seeley, have demonstrated their outstanding and professional ability to conduct the repair of intricate and complex electronic components from Type III modules to entire MTRE systems."

JPL Commends Engineer for Cost-Cutting Idea

A Nortronics engineer from Palos Verdes, on assignment to the Jet Propulsion Laboratory (JPL) in Pasadena, has received a letter of commendation for a recent cost reduction proposal.

Anthony J. Aveni, senior electronics packaging engineer, was recognized for his efforts and interest in the reduction of cost by David E. Ireland, Cost Reduction manager. In his letter to Mr. Aveni, Mr. Ireland said, "Through the diligent efforts on the part of persons such as yourself, the Laboratory will be able to accomplish its assigned mission at a minimum expense without sacrifice of quality or reliability."

Mr. Aveni's suggestion concerned the electronic assembly chassis for the Mariner Mars '69 Program, and saved JPL a sum computed to be in excess of $15,000.

A NORTRONICS ENGINEER at the Jet Propulsion Laboratory has contributed to the JPL cost reduction program. Anthony Aveni (left), senior electronics packaging engineer, won recognition for his suggestion which saved the Mariner Mars '69 program at the Laboratory a sum computed to be in excess of $15,000. Paul Bomke, representative at JPL is at right.

Machinist Earns Maximum Suggestion Award Payment

The first maximum suggestion award in nearly two years at Nortronics has been won by a maintenance machinist in Anaheim. Al Arroues, a 16-year Nortronics employee, received his $2,000 payment this month from Frank Lynch, Nortronics vice president and Anaheim manager.

In a brief congratulatory ceremony, Mr. Lynch praised the efforts of Mr. Arroues, and commended his ingenuity, incentive, and professional ability.

Mr. Arroues' suggestion concerned the flywheel of the 12-ton punch press. By modifying the cast iron unit, Mr. Arroues virtually eliminated flywheel breakage, saving the company nearly $29,000 in parts alone, and labor totaling 1,152 hours.

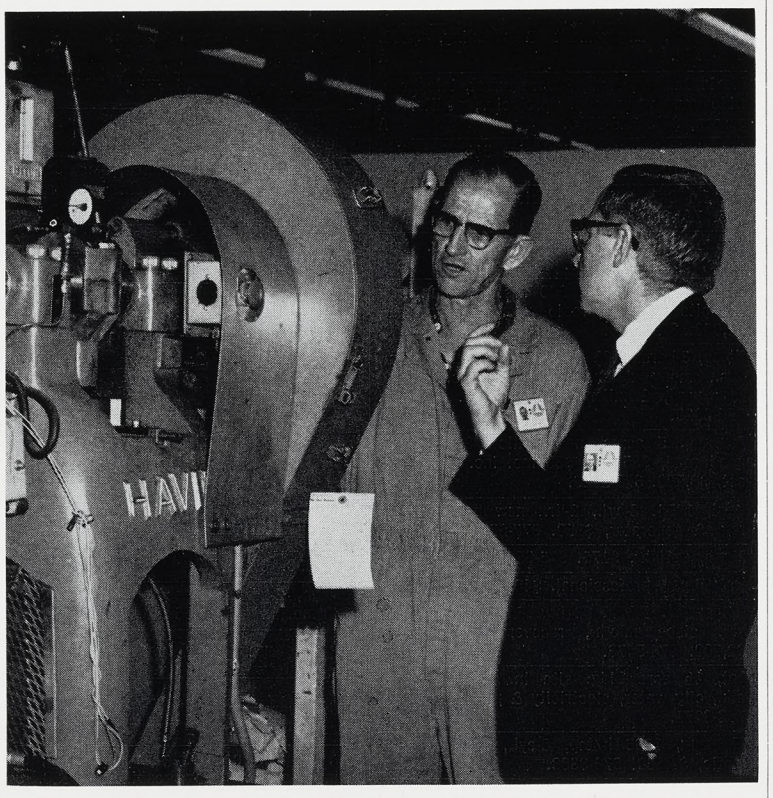
"I knew my idea was worth something," he said, "because we had already started using the suggestion. But, I never dreamed it would amount to this."

Mr. Arroues plans to use a portion of the windfall to wrap up payments on his pickup truck.

In addition to the advantage of receiving the cash, Mr. Arroues also joins the elite society of only a few $2,000 award winners.

Since 1962, when the maximum award was increased to $2,000, Northrop's California installations have had only seven suggestions hit the top. Norair has had four, and Mr. Arroues makes three in Nortronics.

Nine other Nortronics employees received suggestion award checks in January totaling $277. In Anaheim, Gerald Norman and Raymond Wilson shared one award, with others going to Lee Lam, Theodore Stec and Alfred Tucker. At Hawthorne, Sophie Lockrem and Margaret Seitz won more than half the January money, with David Franco and W. H. McCorkell picking up other awards.



POINTING OUT THE PROBLEM to Frank Lynch, Nortronics vice president and Anaheim manager, is Al Arroues, a maintenance machinist at Anaheim for 16 years. Mr. Arroues has just won a $2,000 maximum suggestion award for modifying the 12-ton punch presses like the one shown. His idea will save the company nearly $29,000 and more than 1,100 man-hours a year.

Outgoing Officers Honored by NRC; Installation Held

Outgoing and incoming Northrop Recreation Club officers were recognized and installed in two separate dinners in Anaheim and Hawthorne this month.

In Anaheim, about 90 persons gathered in the New Orleans Room at the Anaheim Stadium Club Restaurant. Master of ceremonies was Art Eckel, who introduced the guest speaker, Elmer Noonan, Industrial Relations director at Nortronics. Mr. Noonan's after-dinner remarks applauded the outgoing NRC efforts and praised both the hard work and sacrifices of those who labored with their partners.

The newly installed Anaheim officers are Bill Kieffer, president; Vito DePaul, vice president; Maxine Hopper, secretary; Norma Hoag, treasurer; and Roy Steinestel, sergeant-at-arms.

Meanwhile, Nortronics Hawthorne-Palos Verdes NRC Council members joined their Norair counterparts at the Proud Bird Restaurant at Los Angeles International Airport.

With Frank Smith, Corporate director of Industrial Relations, presiding, Dick Paramore was introduced to give recognition to his outgoing Council. Mr. Smith made the gavel presentation to Mr. Paramore, who succeeds himself as president. Other officers installed were Joe Kalina, vice president; Paula Gardner, secretary; Bill McNair, sergeant-at-arms; and Kevin McAloon, treasurer.

Harry Clark, Industrial Relations representative, presented gifts to Mr. and Mrs. Paramore on behalf of the Council. Mr. Paramore was the recipient of a stereo amplifier, and Mrs. Paramore received an electric blanket.

Speaking to the combined group of approximately 200 Nortronics-Norair Council members and their guests, Mr. Smith discussed "NRC Through The Years"—recalling the activities and events that have been outstanding since the Northrop Recreation Club was founded in 1940.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California Vol. 26, No. 3 February 14, 1968

TEAMS INSPECTION—A tour of TEAMS facilities is conducted by Frederick Stevens (left), vice president and Nortronics general manager, and Frank Lynch (right), Nortronics vice president and Anaheim manager. The visting Naval officers are Admiral Walter V. Combs, jr., commander of Cruiser Destroyer Flotilla 3, and Lt. William R. Blakeley. They made the tour to become better acquainted with TEAMS equipment. Behind them is V. C. Hinojosa, electronic assembly technician.

Tough Projects Seen By Jones as Leading To Future Expansion

In his first message of 1968 to Northrop employees, Northrop President Thomas V. Jones has described the company's present projects as "opportunities to expand the company's capabilities for the future."

"Tackling the big and tough requirements of our customers always has paid off for Northrop in new opportunities," Mr. Jones said in his address at the February meeting of the Norair Management Club.

Superior Performance

"We were chosen for our present major projects because of our customers' confidence that we would again prove to be a hard-charging outfit that would deliver the kind of new and superior performance that is necessary for new and superior products.

"We have always done our best when we reached for something we have never done before, and we have always stretched our capabilities," he continued. "I would be worried if today's challenges were not tough."

Mr. Jones cited the performance by the Nortronics Division in developing and producing the navigation system for the Lockheed-Air Force SR-71. The task involved "staggering requirements." At first, there were many who believed it couldn't be done. But it was developed, produced and delivered to the Air Force, and was done so successfully that the company won the maximum incentive award possible in every category.

Nortronics' superior performance was a major factor in the division winning the contract for the C-5A navigation system, a completely different system that likewise has never been done before, Mr. Jones pointed out.

"And I am sure Nortronics will repeat the process again and win an even more advanced project in this field as a result of superior performance on the C-5A development."

Another example cited was the Boeing 747 program.

"The performance on the 747 program will be no different than that which will be required on our own advanced aircraft program. If we aren't with it, we'll be out of it," Mr. Jones said. "Our performance so far indicates we have answered squarely the question of whether or not we have what it takes to stay in the aircraft business. We are in this business not just to stay but to lead."

Growth At Page

The performance of a Northrop subsidiary was another example used by Mr. Jones of superior performance and its reward.

A turning point which launched Page Communications on its brilliant growth was its ability to res-

(See MR. JONES, page 4)

Credit Union Announces Earnings of 6¼ Per Cent

Northrop Credit Union's board of directors has declared a dividend of six and one-quarter per cent on shareholder accounts for 1967.

This announcement was one of the highlights of the annual shareholders' meeting held last week in Hawthorne. Other activities included the election of a board of directors for 1968 and members to serve two important committees.

The dividend will be applied to shareholder accounts on record November 30. It will be reflected in quarterly statements to be distributed April 1.

It marks the third consecutive year in which Credit Union members have received a six and one-quarter per cent dividend on their savings and the fifth year in which dividends have ranged between six and six and one-half per cent.

Shareholders elected the following to serve as members of the board of directors for 1968: L.L. Cripe, D.H. Grothe, R.D. Hampton, Mary Delaney, J.J. Richardson, W.D. Schramm and L. W. Monger of Norair; E. J. Johnston and J.S. Penrod of Nortronics.

Named to man the Credit Committee were J.L. Dew, F.E. Wolfe and H.L. Cook of Norair. Selected for the Supervisory Committee were E.R. Foord and H.A. Ralles of Norair, A.W. Johnson of Nortronics, H.J. Grothman and G.W. Thornton of the Corporate

(See CREDIT UNION, page 4)

Army Awards Parts Contract To Needham

A follow-on contract totalling more than $3 million for production of small machined parts and assemblies has been awarded to Northrop Corporation by the U.S. Army. The work will be performed by Northrop Nortronics at its Needham Department.

The new contract, with an increase in production rate, is scheduled to follow an initial order awarded in December 1966. The work will run through November.

The Needham Department is also engaged in production of navigation and communication systems, as well as stabilization control systems.

GARNET SANDEEN

He's Flown 'Everything That Flies'

Back in 1935, 14-year-old Garnet (Sandy) Sandeen took his first airplane ride in a corrugated metal, 8-place Ford tri-motor, sitting in the co-pilot's seat as the "tin goose" came in for a landing.

Since that day at the old Wold-Chamberlain Airport in Minneapolis, Mr. Sandeen, now with Nortronics Anaheim, has devoted every spare moment to some sort of flying.

But, Mr. Sandeen is much more than a glider pilot, soaring enthusiast and a 10-year member of the Soaring Society of America. He is one of comparatively few lovers of aircraft in the world who has flown virtually every man-made thing that flies.

When he is not at his desk as a management development representative for Nortronics, Mr. Sandeen—a licensed commercial flight instructor for more than 20 years—is ground instructing the Civil Air Patrol Squadron 73 in Orange County in preparation for glider flight training.

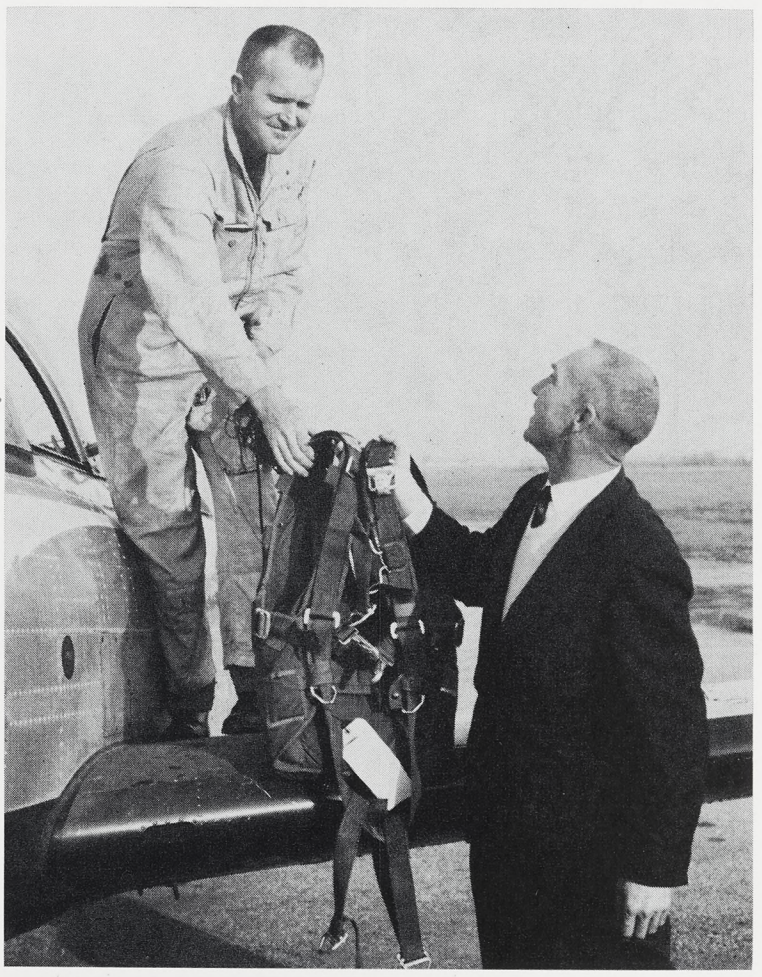
Mr. Sandeen is also actively engaged at the Los Alamitos Navy Aero Club and the El Toro Marine Aero Club as a commercial flight instructor, in addition to time spent with private lessons. At various other times in his career, he has been a flight instructor for the U.S. Air Force Aero Club, and has even taught aerial aerobatics in a biplane at what used to be Sunset Beach here in Southern California.

When a 1939 model Taylorcraft wasn't the way he wanted it, he completely rebuilt the vintage plane, finishing the job in San Diego in 1953.

Mr. Sandeen has performed numerous search and rescue missions as a major in the CAP, in addition to his glider instructing chores, and three years ago was presented the CAP's national Meritorious Service Award for his contribution to the CAP aerospace education program.

Often in past years, Mr. Sandeen has logged the legal FAA commercial flying limit of 36 hours a week. Even today, he spends more time flying than eat-

(See SANDEEN, page 4)



ON THE WING of a T-34 trainer is pilot Garnet Sandeen, as he hands his parachute to Gordon Fowlston of the Long Beach Aero Club. Mr. Sandeen used the plane, a single-engine prop trainer, for student instruction in the Aero Club. He also established a club speed record for transcontinental flights in the T-34.

CRAFTSMEN AT WORK—As Bud McClanahan looks on, Ramon Baez uses a diamond-tipped dressing tool to put final contours and surfaces on a carbide grinding wheel. Norair's Standard Tool Maintenance is Northrop's major user of diamond-augmented tools, although all Northrop divisions utilize them in some form, largely in making tools.

FINISHING TOUCHES—Norair's Les Zimmerman uses a diamond-impregnated wheel to finish the carbide cutting surfaces on a five-inch face mill blade that will be used to cut flat surfaces on steel parts.

Industrial Diamonds— A Vital 'Ugly Duckling'

Diamonds are the mineral with a dual personality.

Perfect diamonds are man's most valued gem, a "girl's best friend," and carbon in its purest form. However, only one of every five diamonds mined has the color or brilliance to become a gem.

The remainder, the ugly-duckling cousins, are relegated to another status, another personality. They become industrial diamonds, or "borts," the hardest substance known to man.

Northrop Corporation utilizes industrial diamonds throughout its operations.

In drilling, grinding, cutting, trimming and dressing procedures, industrial diamonds used in conjunction with wheels, drills, saws and dressers are valued assets. Most are tools used primarily in making other tools, especially those fabricated of extremely hard metals, such as carbide, that are employed in day-to-day production operations.

In this environment, diamond-tipped or diamond-impregnated tools know no peers.

Coring drills and abrasive wheel dressers are tipped with industrial diamonds that range in size from a half-carat up to three carats, dependent upon their use and the resistance of the materials they are used to fashion. In others, diamond chips are bonded in metal to augment the abrasive action.

Diamond particles or grit is also bonded into metal in varying amounts that go into making wheels and even saw blades for a high degree of polish or finish in cutting, grinding, dressing, and sharpening.

Northrop's largest user of diamond-augmented tools is Norair's Standard Tool Maintenance, the organization that makes and maintains tools of regular or exotic materials.

(At Northrop Nortronics and Northrop Ventura comparable organizations utilize similar equipment for the same purposes, but on a smaller scale.)

Elsewhere at Norair, industrial diamonds are employed by the Machine Shop on cylindrical, surface and thread grinders, by Tool Fabrication for certain dressing routines, by Manufacturing Research and Development and Engineering Laboratories in specialized work with materials for today's and tomorrow's systems and aircraft.

Less intriguing is the use of diamond-impregnated saw blades and diamond-tipped coring units to cut and drill concrete by Maintenance personnel.

Northrop acquires tools utilizing industrial diamonds direct from a vendor. It also returns these tools to the vendor for repair or rework.

For example, diamond-tipped dressers that become dulled in normal use are returned to have the diamond reset. This simple, and inexpensive, operation involves turning the diamond so that a new cutting surface is exposed. Thus, one tool can be used for extended periods of time by merely resetting the tip.

Gem diamonds are about nine times as expensive as industrial diamonds.

WORKING DIAMONDS—Unmounted industrial diamonds are displayed with an assortment of tools containing diamond-tipped or diamond-impregnated surfaces typical of those in daily use at Northrop. Diamonds, the hardest substance known to man, are used primarily in making tools of hard materials, such as carbide, that are employed in cutting, shaping or forming the so-called exotic metals of many types.

Retirees Install Officers, Plan Next Meeting

Northrop's Retirement Club last month seated a new slate of officers, headed by President Jeannette Kaupp, to serve for 1968.

Others installed included George Sanborn, vice president; Margaret Bruchez, secretary-treasurer and James Curran, sergeant-at-arms.

Appointed to head key committees were Alvera Hayes, historian; Leo and Anna Day, welcoming; Marie Beyer, clubhouse; Ralph Garcia, trips; Ida Pantier, sunshine; Dan Whelan, reunion and entertainment; and Walter Brophy, newsletter.

The Retirement Club meets February 21 at NRC Clubhouse, Hawthorne, with business to get under way at 1 p.m. Included on the agenda are games, refreshments, door prizes and a special color slide presentation of Alaska to be shown by Cyrus McClean.

Morse Code, Radio Theory Class Scheduled

The first in a series of Morse code classes, conducted by the Northrop Radio Club, will begin at 7 p.m. Monday in the NRC Clubhouse in Hawthorne.

Curriculum will include Morse code, basic radio theory and rules and regulations of obtaining amateur licenses.

Enrollment is open to all Northrop employees and their spouses, Commissioner Bill Anderson said.

"We want to emphasize that the course is open to women, as well as men," Mr. Anderson said, "and that there are many people in addition to amateur operators who might find it valuable. For example, scout leaders or pilots might find knowledge of the Morse code useful."

Additional information may be obtained by contacting Mr. Anderson at Norair ext. 1933 or by attending the opening class session. Class materials will be provided by the club.

Tax Counsel Urges Early Processing of State Returns

Increased California income taxes have prompted Howard Rath, director of Northrop's Tax Administration, to advise employees to prepare their 1967 California returns as soon as possible.

"The state income tax has been increased very substantially," Mr. Rath said, "and, as a result, the average taxpayer may be in for an unpleasant surprise when he computes his 1967 California income tax. In many cases, the 1967 tax will be more than double the 1966 tax."

Although April 15 is the deadline for filing the California tax return, Mr. Rath advises all employees to compute their tax liability now in order to plan to have funds available to pay the tax.

Blood Drive Successful

Red Cross Blood Donor Day at Nortronics Anaheim was an overwhelming success as 171 pints of blood were collected from employees last month.

"In fact," says Harry Belcher, of Employee Services, "we had to turn away some donors because we just couldn't receive the blood any faster." More than 200 prospective contributors filled in donor cards, but the six-bed donor station could only accommodate 171 in the half-day session.

Secretaries Plan Spring Seminar

Northrop Corporation secretaries have been invited to take part in the annual Spring Seminar of the Stellar Chapter, National Secretaries Association on March 9.

This event, entitled "GO OR NO GO—A Space Age Challenge to You" will be held at 8:30 a.m. in the City of Commerce. It will include workshop speakers and a tour of the Apollo Command and Service Module facilities at North American Rockwell.

Contact Doris Robinson at ext. 1067, Norair, for details.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

For Sale

Roller Skates, girl's, metal carrying case, size 7, $5. 329-6728. A

Scope, sig. gen., VTVM, fact. wired Heathkit, 3″ scope, Knight r.f. sig. gen., Simpson v.t. multimeter, $100. 545-5023. A

Breakfast Nook, custom seat, L-shaped, seats 4 or 5, $50. 328-1520. A

Suspension Stabilizers, front & rear for Volkswagen sedan, $10. 375-8536. A

Camera, 35mm Bolsey, $15. 714-539-2098. A

Mustang, 1965, 289-225 h.p., a/c, p/s, p/b, console, many extras, $1,995. 323-4257. A

Bicycle, Schwinn Varsity, 27″ 10-spd. Derailleur, $25. 325-2292. A

Bedroom Furniture, painted, 2 3-drwr. dressers, student kneehole desk, step bookcase, $18. 326-5731. A

Generator, 115 V, 60 Hz, 400 W, or 12V DC for Honda, $150. 714-597-2260, 359-2267. A

Refrigerator, $15. Box 301. A

TV, maple cabinet, color, 23″, $325. 644-4529. A

Range, O'Keefe & Merritt, gas, 42″ w/top griddle, $30. 675-3407. A

Laundry Sink, cast iron w/porcelain finish, wall bracket inc., $10. 323-8797. A

Ford, 1961 500 Fairlane, 4-dr., V-8, air cond., r/h, $375. 329-0086. A

Floor Scrubber-Waxer, Sears, brushes, buffing pads, cpt. cleaning attach., $30. 833-5594. A

Ford, 1960, 2-dr., 6-cyl., std. shift, new paint & trans., $300. 634-4848. A

Pups, German shepherd, pure black females, champ. stock, AKC reg., shots & wormed, $75 ea. 675-6283. A

MG Midget, 1964, wire wheels, radio, $1,050. 370-2876. A

Volkswagen, 1964, $1,250. 422-4942. A

Station Wagon, 1961 Comet, auto. trans., r/h, recent o/haul, $695. 676-8842. A

Volkswagen, 1959, w/'65 reblt. eng., body damage, $350. 676-6169. A

Chevrolet, 1959 2 dr., 348 cu. in., auto. trans., r/h, p/s, p/b, $275. 676-9736. A

Apts, 8, 2-4 unit bldgs., all 2-bdrm., $76,000. 837-0989. A

Volvo, 1962, P-1800 sport cpe., o/drive, AM-FM radio, new paint & tires, $1,795. 393-1453. A

Engine Lathe, Logan, 9″ w/tools, $300. 679-7689. A

Cemetery Lot, Parkview plot, Inglewood Cemetery, $550. 329-6174. A

House, 3-bdrm., 2½ baths, 5¾% loan, $55,500. 375-0867. A

Volkswagen, 1963 sunroof, AM-FM radio, many extras, $950. 327-0410. A

Jig Saw, Craftsman bench model w/⅓ h.p. motor, $28. 377-4694. A

Chevrolet, 1966 Chevelle Malibu sport cpe., 283 cu. in., auto., p/s, r/h, $2,175. 329-6717. A

Vacuum Cleaner, Electrolux, $25. 677-9438. A

Volkswagen, 1963, r/h, $900. 323-7119. A

T-Bird, 1959, full power, air cond., $595. 672-8060. A

Camera, 8mm movie, Bolex f:1.9 & telephoto lens & filters, case, $30. 675-1378. A

Falcon, 1962 Futura, 4-spd. trans., 170 cu. in. 6-cyl., eng. rebit., many extras, $700. 714-521-1516. A

Dodge, 1967 Dart, p/s, 2-dr. h/top, $2,400. 752-4576. A

Dishwasher, General Electric, portable, $50. 679-1924. A

Rambler, 1962 2-dr., 6-cyl., stick shift, $400. 662-1817. A

Chevrolet, 1959 2-dr. sedan, reblt. motor, new tires, $250. 532-6687. A

Chevrolet, 1960 Impala, 348 eng., $450. 679-7840. A

Ford, 1961, V-8, 2-dr., auto., r/h, $425. 328-3306. A

Triumph Cub, 200 cc., reblt, $250. 363-3843.

China, Royal M, fragrance pattern, service for 10, many extras, $35. 679-6982. A

Shelby, 1967 GT500, p/s, p/b, auto., 428 cu. in. LeMans eng., $4,300. 675-1365. A

Motorcycle, 1964 Suzuki, 250 cc, $275. 326-7528. A

Skis, Head Standard, 6'3″, Marker toes, $65. 327-1309. A

Utility Trailer, 4′ by 8′, $45. 714-528-7086, 714-528-7450. A

Drum Set, 4-pc. Gretsch, Zildjian cymbals w/hi-hat stand, $300. 676-3087. A

Bedroom Set, 5-pc., maple, $110. 324-0798.

Station Wagon, 1963 Rambler American, $550. 757-7283. A

Wedding Dress, size 10, full length w/overskirt, $30. 754-5358. A

For Sale

Refrigerator, white, Hotpoint, $25. 805-395-3834. A

Home, 3-bdrm., 1¾ baths, cpts., dps., pool, h/wood floors, 5¾% loan, $29,500. 325-9328. A

Drag Strip, Eldon, 2 dragsters, elec. timer, power pack & controls, 10′ long, $20. 371-8695. A

Quilts, hand-made, Dacron, single or dble. bed size, various designs & colors, $40 & up. 676-7006. A

Corvette, 1965 Fastback, AM-FM, 4-spd., 300 h.p., $2,990. 370-4316. A

Tape Recorder, Tandberg, model 64 & Tandberg TM3 microphone, $395. 459-2281. A

Carpeting, 40 yds. Mohawk Herculon, beige, never used, $200. 329-7777. A

Kittens, sealpoint Siamese, 9 wks. old, 1 male, 2 females, $20. 371-8330. A

Refrigerator, Westinghouse, crosstop freezer, white, 11 cu. ft., $125. 714-534-0059. A

Dodge, 1964 Dart convt., r/h, $950. 714-595-3429. A

Cemetery Lot, 2, Inglewood Park Cemetery, Avalon tract, $400 ea. Box 302. A

Relax-A-Cizor, used twice, take over $19.90 mo. pymts., $160 bal. 675-8313. A

Lot, 90 x 190 deep, at Apple Valley, $750. 714-535-1694. A

House, 3-bdrm., 2 baths, fam. rm., 15′x35′ swim pool, 1,600 sq. ft., cpts., dps., $23,500. 714-525-3389. A

Renault 4CV, 1959, '62 Dauphine eng., $75. 328-9064. A

Ski Boat, 15′ Fleetcraft, 35 h.p. Evinrude, trailer, $350. 869-6823. A

Yamaha 80, for dirt or street, assorted parts, $150. 676-0049. A

Acreage, 5 acres in Antelope Valley, $35 down & $35 mo., inc. 6% interest, $3,500. 378-1026. A

Camera, Nescon, 35mm, flash cube attach., $25. 326-1876. A

Trailer, ¼-ton, spare tire, $75. 377-3642. A

Wing Chair, 2 oversized, custom-made, need reupholstering, $60. 374-2756. A

Drums, St. George snare, bass, 2 tom toms, hi-hat & ride cymbals, $125. 633-6106. A

Turntable, Music master, w/audio Empire arm, $20. 277-0190. A

Typewriter, Remington Quiet-Writer, deluxe portable w/case, $45. 714-635-1686. A

Gun, .357 mag. Smith & Weston, holster & shells, $100. 714-893-2071. A

Cad-Allard, K-3, $1,200. 398-5019. A

Honda, 160 cc, 1965, $325. Box 303. A

Go Kart, live axle, Mack 7, Air Hart brake, $175. 323-3051. A

Desk, executive-type, walnut finish, 32″x60″, $75. 372-9845. A

Projector, Eastman Carousel 800, 35mm, extra projection lamp, $75. 788-9709. A

Communications Receiver, National HRO-60, complete w/coils A, B, C, D & AC, loudspeaker, other access., $200. 363-0185. A

Mercury Comet, 1961 4-dr. Deluxe, $495. 753-7484. A

Camera, auto. Westagon f2x50mm, $30. 377-4019. A

Home, 3-bdrm., 2 baths, heated pool, small equity, $35,450. 431-0250. A

Collie, black female, 2 yrs. old, AKC reg., w/dog house, $25. 675-9446. A

Jumper Swing, 3 mo. to 18 mo., $4. 755-7166. A

Toaster, Dormeyer, $4.50. 378-1863. A

Bicycle, boy's 20″ Huffy, new tire, training whls., $18. 714-673-0244. A

Stereo, solid state Magnavox Castalla, AM-FM, phono, new, at factory, $250. 672-7424. A

House, 2-story, 4-bdrm., 3 baths, fireplace, cpts., sundeck, patio, block wall fence, 2-car gar., $46,900. 675-7581. A

Van, 1964 Chevrolet, auto. shift, 6 cyl. eng., new tires, $1,000. 645-7484. A

Motorcycle, 1966 Jawa, model 361, 350 cc, extra chrome, $350. 756-4837. A

Station Wagon, 1957 Ford, auto., $150. 327-5747. A

Air Conditioner, 14,000 btu, Sears Coldspot, $175. 371-4083. A

MG, 1948 TC, 19″ wheels, right-hand drive, $1,195. 805-944-2678. A

Piano, baby grand, Emerson, mahogany finish, $625. 375-8778. A

Trail Bike, 1965 Bridgestone 90, $250. 323-9598. A

Nash, 1960 2-dr. American, r/h, 6-cyl., st'd. shift, $100. 677-3920. A

Lot, ½-acre, bldg. site in Agoura, horses o.k., city water, electricity & phones, $8,500. 783-8271. A

Station Wagon, 1958 Chevrolet, V-8, r/h, p/s, $275. 479-5653. A

Faucet, Delta, model 200, single handle control, wall mounted type, $9. 675-8813. A

Luggage, Val-Pak, dress size, 4 hangers, red plaid, $10. 672-5545. A

Chevrolet, 1963 Impala, new trans., clutch, $1,350. 671-2457. A

Falcon, 1963 Futura convt., stick shift, $575. 329-6210. A

House, in Palmdale, 5-bdrm. & fam. rm., 1¾ baths, h/wood flrs., lge. patio in fenced back yard w/shade trees, dble. gar., 4½% loan, 62x145′ corner lot, 5 min. to Norair Plant 42, $18,500. 805-947-6754. A

Honda, 1966 Superhawk, 305 cc, many extras, $495. 372-0313. A

For Sale

Chevrolet, 1962 convt., air cond., $800. 545-2267. A

Camper, slide-in type, for ½-ton truck, $40. 429-7772. A

Mustang, 1966, V-8, 3-spd., r/h, $1,800. 375-0165. A

Twin Bed, mattress & box springs on steel frame w/rollers, $50. 676-3050. A

Box Spring, mattress, frame, dble. size, bedspread, $25. 474-5644. A

Volkswagen, 1964, r/h, $825. 676-9827. A

Swing Set w/slide, $15. 866-6615. A

Motorcycle, 1964 Harley Davidson XLCH Sportster, 66 tank & night guard, $300 equity & take over $50 mo. pymt., $900 approx. bal. 370-2214. A

Income Property, 6 units, 5 min. from Northrop, 1 3-bdrm., 1 2-bdrm. houses, 2 1-bdrm. duplexes, enc. gars., $7,000 dn., assume low interest loan, $54,000. 679-7963.

Casement Windows, 3, Alm., 38x48, $15. 370-4326. A

Surfboard, w/speed skag, Wardy, $35. 862-3095. A

Xylophone, Deagan, $125. 329-5364. A

Suzuki, 1966, 250 cc, X-6 Hustler, $475. 679-4120. A

Golf Clubs, 1966 Haig Ultra, D-2, stiff shaft, $130. 830-6163. A

Acreage, near Willow Springs, 5 acres, $30 down, $30 mo., $600 acre. 376-5810. A

House, 4-bdrm., 1½ baths, bltins, block wall fence, dble. attach. gar., used brick fireplace, 30 min. from Norair, assume 5¼% FHA loan, $22,500. 714-897-9075. A

Razor, Schick, cordless rechargeable, $25. 671-6692. A

Accordion, Lindo, 120-bass, velvet lined case, 7 keyboard switches, 2 bass switches, $100. 670-6365. A

Stove, O'Keefe & Merritt, stainless top & griddle, grillevator broiler, $45. 326-6214. A

Station Wagon, 1964 Impala, $1,395. 635-3127. A

VW Engine, 1961, reconditioned w/new rings, pistons, cyls. & bearings, $185. 756-9697. A

Pontiac, 1960 Catalina, 4-dr., auto. trans., p/s, p/b, $385. 379-9347. A

Davenport, 7′ French provincial, purple blue tweed, $100. 328-8855. A

Station Wagon, 1961 Rambler Ambassador, V-8, factory air, p/s, p/b, $425. 769-3345. A

Chevrolet, 1964 Impala, p/s, auto. trans., r/h, new tires, $1,400. 679-2456. A

Honda, 1965 Scrambler, 250 cc, $400. 672-6794. A

Dishwasher, portable, G.E. Mobilemaid, 3 yrs. old, never used, $75. 378-0603. A

Station Wagon, 1967 Ford Country Sedan, 6-pass., 390 2V eng., a/c, p/s, p/b, auto., $3,095. 324-2992. A

Home, 1-bdrm., knotty pine int., gas, water, elec., ½-acre view lot, in high desert area, inc. u/ground cooler-storage rm. & supply rm., $3,000 dn., $9,950. 370-7092. A

Cabin, Lake Elsinore, 2-room, fully furn., air conditioner, fireplace, terms if desired, $7,500. 328-5730. A

Volkswagen, 1963, radio, 2 new spare tires, $875. 375-5761. A

House, 2-bdrm. & den, 1½ baths, near Panorama City, $19,950. 661-8949. A

Trailer, 1960 Kenskill, 17½′, self-contained, $975. 838-0015. A

Truck, 1962 Chevrolet, ½-ton, w/Stahl Service body, new tires, major tune-up, $995. 564-2263. A

Aquariums, 4, filter pump & fish, $60. 676-4273. A

Truck, 1961 Chevrolet Fleetside, short bed, r/h, camper shell, $850. 714-523-2495. A

Falcon, 1962 Ranchero, 6-cyl., stick shift, r/h, $695. 377-1074. A

Pool Table, 8′, 4 cues, rack & balls, $125. 676-1471. A

Acreage, 2½-acre parcel of farmland near Lancaster, $1,500 dn. & $50 mo. at 6% interest, $5,500. 375-7130. A

Refrigerator, $25. 883-9430. A

Comanche 180, 1958, Narco Mk. 12A w/ V.O.A. 4 omni plus Narco omnigator MK2 & a.d.f., full gyro panel, $9,200. 375-0615. A

Range, Gaffers and Sattler, gas, griddle, broiler, $25. 754-7947. A

Rug, 12 x 14, rose, beige, $75. 674-4563. A

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., 1½ hrs. total time, $750; trailer, $125. 758-9182. A

Wanted to Buy

Porsche Speedster in good condition. 477-8791. B

Auto, $100 to $150, in good running condition. 835-6492. B

Jeep, 4-wheel drive, in good condition. 370-7749. B

Welding Outfit, oxy/acy., complete or parts. 371-7382. B

Hi-Fi Speakers, Janzen Electrostatic & AR-IW. 478-7100. B

Panel Truck, 1935-'40 Chevy or Ford, reasonably priced, running or not. 632-2642. B

Potter's Wheel, preferably foot-powered, will take repairable to good condition. 545-6360. B

Youth Bed, complete w/rails & mattress, reasonable. 714-546-6714. B

Generating Unit, Tiny Tiger, portable, gas-powered ac-dc elec. power. 327-2621. B

Wanted to Buy

Seats, pair, for Porsche Speedster or trade for a set of reg. Porsche seats. 376-6182. B

For Trade

Station Wagon, 1964 Ford Falcon Deluxe trade for car of equal value. 329-9484. C

Poodle, white, toy, female, $75 value, trade for power tools, furniture or surfboard. 671-8401. C

Slot Racing Cars, controllers, parts, whls., approx. $125-$175 value, trade for Citizen Band transceiver, Mobile preferred, of equal value. 679-6430. C

Free (To Be Given Away)

Pup, 6 mos. old, female, basset hound. 714-538-3495. D

Rabbit Pen, large. 834-0309. D

Rentals Offered

Apt, 1-bdrm., furn., all bltins, pvt. deck, lge. pool, sub parking, near Northrop, $145. 670-6084. E

Duplex, 2-bdrm., fenced yard, 1 child o.k., $78 mo. 370-3396. E

Cabin, Green Valley Lake, $35 w/end; $55 wk. 320-6341. E

Bachelor Apt, furn., upstairs, close to Norair, $70 mo. 676-5921. E

Apt, 1-bdrm., cpts., dps., bltin range, refrig., air cond., $110. 391-7781. E

Woman will share home & gar. w/working woman, also utility expenses, $70 mo. 370-4045. E

Vacation Cabins, Lake Gregory & Crestline, sleeps 6, make reservations now, $25 w/ends; $60 wk. 391-2040. E

House, 2-bdrm., furn., Inglewood area, $165 mo. 823-5225, 823-1910. E

Apt, 3-bdrm., 2 baths, 3 blocks from the ocean, cpts., dps., bltins, piped music, bltin vacuum, gar. w/cabinet storage, $165. 376-9608. E

Rentals Wanted

Studio Apt, 2-bdrm., furn., cpts. & dps., bltins, gar., Inglewood-Hawthorne area, need by March 1, $185 mo. 673-1624, 676-1286. F

Garage for storage in Wilmington, San Pedro or east Torrance area. 834-2845. F

Child Care Offered

Child Care in my home, infants, yard. 644-3817. G

Found

Jacket, men's, beige, at Personnel Activities, Nort. Hawthorne, ext. 301. K

Personals

On my retirement, please accept my sincere thanks to everyone in Orgn. 5707 who made my last working day a memorable one. I will carry to Texas with me many pleasant memories. My thanks & best wishes. (TUDIE) ROOMES. L

My thanks for the lovely flowers & gifts from Herman's many friends. Your thoughtfulness will always be remembered. BENGTA HOOGERBRUGGE. L

I wish to thank all my friends at Norair for their thoughtfulness following my accident. ARTURO BANURA & FAMILY. L

For Sale or Trade

Boat, 16′ trailer, Mark 75 o/board motor, all access., $750 or trade for car. 679-2041.

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Crenshaw Blvd. & 235 St., Torrance. Edna Berry, Santa Fe ext. 624, 631, 326-6425.

7:30 a.m. — 4:15 p.m.

Garden Grove & Westminster Area. William T. Wright, Norair ext. 1391, 714-897-8277.

Century Blvd. & La Cienega or Century Blvd. & Inglewood Ave., Inglewood. Will need transportation until March 1. Penny Prouty, Norair ext. 2015, 673-1624.

8 a.m. — 4:45 p.m.

Encino, White Oak & Topham, Encino. Can meet at Fwy. & White Oak on-off ramp or in Tarzana, Encino or Reseda area. Linnell Anderson, Norair ext. 1676, 342-7565.

Rides Offered

7:30 a.m. — 4:15 p.m.

Garden Grove & Westminster Area. William T. Wright, Norair ext. 1391, 714-897-8277.

8 a.m. — 4:45 p.m.

Encino, White Oak & Topham, Encino. Can meet at Fwy. & White Oak on-off ramp or in Tarzana, Encino or Reseda area. Linnell Anderson, Norair ext. 1676, 342-7565.

San Pedro & Western Ave., San Pedro. Shirley Feenstra, Norair ext. 2277, 831-1745.

For Sale or Trade

Carbine, U.S. M-1 .30, $75 or trade for Colt .45 auto. or Luger pistol. 379-3487. M

Trailer, 16′, elec. brakes, $850 or trade for pickup truck. 805-498-3403. M

Stereo Speakers, 2 lge. 2½′ high Chrysler, 4 mos. old, $175 or trade for old transportation car. 759-7233. M

Flag From F-5 Combat Mission Given to Loyola

A United States flag that went along on a combat mission aboard a Northrop F-5 tactical fighter over Vietnam now flies above the campus of Loyola University in Los Angeles.

Captain John D. Geron, AFROTC instructor at Loyola, suggested the idea to Captain Frederick L. Wells, a member of an Air Force advisory team at Bien Hoa Air Base, Vietnam.

Captain Wells flies the F-5 as an advisor with the 23rd Vietnamese Air Force Wing and took the flag along with him on a combat mission.

Upon completion of the mission, Captain Wells sent the flag to Captain Geron for presentation to the Loyola student body.

LONG MAY IT WAVE—USAF Captain Frederick L. Wells (right) and Vietnamese Air Force Lieutenants Le My (left) and N. T. Dung hold a U.S. flag they took along on a three-plane F-5 combat mission in Vietnam. The flag now flies over the campus of Loyola University, Los Angeles.

Employee's Son 'Stars' In Show From Vietnam

To glance at television in the living room and suddenly see your son, when you know he's serving in Vietnam, has got to be at least a surprise. And so it was for a 19-year Nortronics employee and his wife.

Specialist Dory

Glen Dory, a foreman in Tool Manufacturing at Anaheim, and Mrs. Dory could hardly believe their eyes. But there he was — his face in full color and full screen — Army Specialist 4 Bill Dory, looking well and happy.

Bill was part of the 506th Engineering Company that helped set up the Bob Hope Christmas Show when it landed in Chu Lai for the holiday performance. So, he got a good seat—close up—and when the cameraman focused on his face for a reaction shot, Bill was on TV before he knew it.

That's why he didn't write home about it. He wasn't sure he had "made the show."

Later, Bill and his buddies in the 506th were so busy polishing off the 36 boxes of homemade cookies, cigarettes and other goodies that his mother had sent from home in Placentia, that he forgot all about the possibility of being seen on national television at home.

But, he didn't forget to write home about the cookies nor did his company sergeant.

Bill has been serving in Vietnam since last June and is due to rotate to the United States next June for discharge.

MR. JONES

(Continued from page 1)

pond to an urgent request for proposal within an hour and then proceed to deliver a communications system in Vietnam a year ahead of schedule under the most adverse conditions possible.

"As you can see from these examples," Mr. Jones continued, "the need to keep ahead of change in technology, in management methods and in our whole attitude toward our work will dominate every phase of our company's activity.

"We must maintain throughout the company a posture of matching our performance to today's and tomorrow's challenges and not be content with what worked well yesterday.

"We have always understood that a company like ours has to regard change as not only inevitable but desirable. We don't wait for changes to happen to us. We initiate them and make them the strength of our future," he concluded.

CERTIFICATES OF COMMENDATION have been awarded to seven Nortronics Anaheim employees in the Materiel section for cost improvement contributions in January. E. J. Johnston (right), deputy director of Materiel; and J. J. Blonk (left), General Purchasing agent; presented the certificates to (back row from left) Bob Bartlett, Don Atwater, Ralph Hamrick, (seated from left) Bob Yarbrough, Frank Asnon and Bob Bredeweg. Carl Romero also received a certificate, but was absent when the picture was taken.

Supervisors Complete Safety Training Course

Fourteen Nortronics Anaheim supervisors have completed the Supervisors Safety Training Course and have been presented certificates by Frank Lynch, Nortronics vice president and Anaheim manager.

The course was under the supervision and direction of Al Van Der Most, safety administrator. It was conducted by L. B. Lambeth, Management Safety Committee chairman, and other members of the committee.

Another cycle of the course, with 14 more supervisors enrolled, is now under way and will conclude in July.

Supervisors in the six-month course of bimonthly meetings serve on the Safety Committee as an integral part of their 12-hour training, according to Donald McInnis, co-chairman of the committee.

All graduates must pass a final examination prepared by the National Safety Council's Safety Training Institute.

Those who completed the course are Gene Ater, supervisor, Receiving; Pearly Ball, foreman, Tool Manufacturing; Ulyss Basham and Art Bowser, foremen, Machine Shop; Larry Buckley, foreman, Mechanical and Electrical Assembly; Ray Gebler, supervisor, Ordnance Assembly Control; Keith Hughes, foreman, Ordnance Assembly Packaging; Hiro Ichikawa, supervisor, Tooling Gage and Calibration Inspection; Jack Lahn, foreman, Electrical Maintenance; Ellie Lingel, supervisor, Mechanical Assembly; Pete McElravey, foreman, Opto-Mechanical Development; Arnold Monreal, supervisor, Fabrication Control; Del Mott, supervisor, Ordnance Laboratory; and Jerry Riley, foreman, Ordnance Fabrication.

SAFETY TRAINING CERTIFICATES were awarded to 14 who successfully completed the Supervisors' Safety Training Course conducted by L. B. Lambeth, chairman, and other safety committee members. In top row (from left) are Frank Lynch, Nortronics vice president and Anaheim manager, who presented the certificates, Pearly Ball, Ellie Lingel, Larry Buckley, Keith Hughes, Ulyss Basham, Jerry Riley, Arnold Monreal, Mr. Lambeth, and Gene Ater. In front row (from left) are Pete McElravey, Hiro Ichikawa, Ray Gebler, Art Bowser, Del Mott, and Jack Lahn.

Management Club Elects Pine; First Meeting Planned

New officers for the 1968 Nortronics Management Club have been elected in balloting completed by approximately 500 Club voters, according to outgoing Club President Tom Barry.

The new officers are Stan Pine, president; Neal McKenzie, vice president; Vic Gausepohl, secretary; Gordon Nelson, treasurer; and Al Blythe, sergeant-at-arms.

The first dinner meeting for the year will be February 21 at the Elk's Club in Long Beach, and will feature installation of the newly elected officers. Frederick Stevens, vice president and Nortronics general manager, will be guest speaker at the meeting.

CREDIT UNION

(Continued from page 1)

office.

Mr. Penrod read the annual president's message for Mr. Grothe, 1967 Credit Union president, at the shareholders' meeting. Highlighting activities for an outstanding year were the issuance for the first time of second trust deeds on homes, Creditor's Life Insurance on all loans at no extra cost, more liberalized automobile loan financing and a change-over from manual to computerized accounting for Credit Union business.

During 1967, the Credit Union welcomed 1,500 new shareholders and issued 1,382 new loans.

GARNET SANDEEN

'Everything That Flies'

(Continued from page 1)

ing, averaging 15-18 airborne hours a week. He most often flies Cessnas, Pipers or a Beechcraft, but is also qualified to pilot seaplanes—and has handled both Hiller and Hughes helicopters.

As you might expect, flying has become a family affair at the Sandeen household in Costa Mesa. Mr. Sandeen is instructing his wife in flying (Mr. Sandeen: "I'm really quite patient with her"), and their daughters aged 6 and 4 very often go along for the ride.

If you're wondering how one man has found time to accomplish all this, it might surprise you to know that Mr. Sandeen has spent about as much time learning as he has teaching. He has a bachelor's degree in political science, a master's in education, 24 graduate units in psychology as well as a law degree from La Salle University in Chicago.

While serving as a lieutenant commander in the U.S. Navy in World War II and in Korea, he graduated from the Naval School of Hospital Administration, the Army's Chemical Corps School and the Marine Field Medical School. Somewhere in-between he has flown the Goodyear blimp, commercial charter flights, and air-filled ascension balloons of the single seat and three-place basket variety.

The reason for all this activity in and about the air isn't hard for Mr. Sandeen to explain. "I consider sport flying a second profession," he says, "because it requires a certain amount of individual skill and is a continuous test of performance and ability."

Mr. Sandeen now looks forward to the day when his CAP Squadron of 13 to 18-year-olds in Santa Ana can earn enough ($2,000-$2,500) to buy their own glider. When this happens—probably in the summer or fall of this year—he and the cadets will be spending countless hours of learning to fly by the whishing sound of wind against wings.

And, if you don't fancy yourself in a glider, would you like to ride in his beautiful balloon?

Bridge Play Scheduled

Duplicate bridge competition for regular members and newcomers is featured by the NRC Bridge Club at regular meetings held at 7:15 p.m. the first and third Fridays and the second and fourth Tuesdays at the NRC Clubhouse, Hawthorne.

IN SUPPORT OF POLARIS—The U.S. Navy Special Projects Office this month presented to Nortronics' Support Depot a certification of outstanding performance. Joe Hersch of the Special Projects Office presents the recognition to M. A. Seeley, chief of Electronics Product and Support. Present for the ceremony were Lt. Norman Culver, Naval technical representative; Frank Lynch (center), Nortronics vice president and Anaheim manager; and Ralph Dix (right), manager of Polaris/Poseidon programs.

NORTHROP NEWS

NORTHROP NORTRONICS

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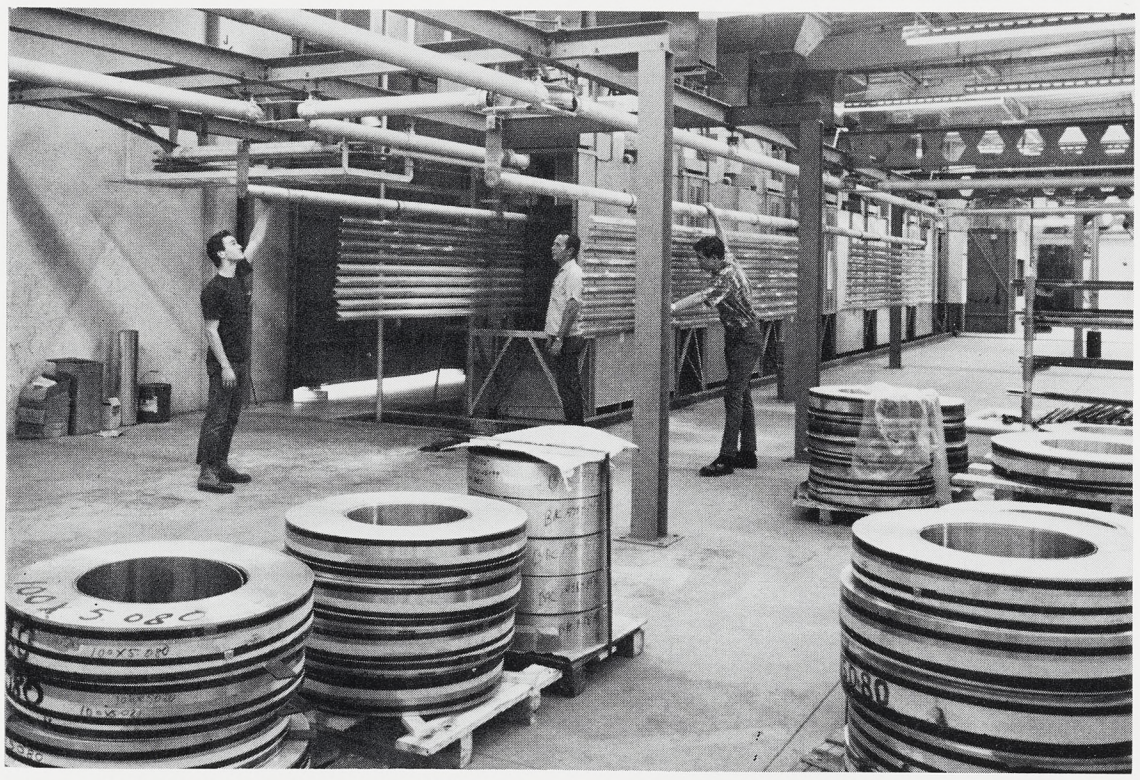


'CAR WASHING' THE STRINGERS is the job of these Nortronics Anaheim penetrant line loaders. Bill Walters, jr. (left) starts the rack of stringers into the "car wash" to begin the cleaning operation prior to the dye penetrant process.

Don Davis (right) moves another rack of stringers into position to be fed into the automated monorail system. Mike Schultz, line supervisor, oversees handling. In the foreground are stacks of coiled aluminum stock.

Heat Treat, Quick Chill Stringer Tanks Near

Stringer production facilities at Nortronics Anaheim have expanded with the Boeing certification of the cleaning and die penetrant process line, and the conversion coating line. Both are elements of the automated "car wash" concept being utilized on the stringer production line.

Nearing completion in Building Y-12 is the solution heat treat and quick chill facility in which stringers will be heat treated at 910 degrees Fahrenheit and quick chilled to minus 60 degrees Fahrenheit.

These installations are significant to Northrop in that there will soon be established for the first time under one roof, an entirely new method of producing aircraft stringers. The Northrop-developed Yoder roller, adiprene dies and mass joggler being used at Nortronics Anaheim are new to the aircraft industry.

According to Grant Gunderson, chief of Production at Anaheim, "It is our intention to be in the stringer business for years to come, not only with Boeing on the 747, but as long as there are aircraft stringer requirements in the industry." Mr. Gunderson emphasized that "with our newly completed equipment and facilities we are now capable of meeting sizeable future demands for stringers of many makes of airplanes."

Approximately three and one-half miles or 700 roll-formed Nortronics stringers, ranging in length from 18 inches to 26 feet, are used in the Norair-built 153-foot-long central fuselage section of each Boeing 747. Present stringer production at Nortronics has turned out the equivalent of seven shipsets.

The aluminum stringers will become the length-wise "ribs" which tie together the fuselage bulkhead rings and support the outer surface, or skins of the giant aircraft, due to roll out before the end of this year.

Space Day Program Planned in Fullerton

In response to a request from the Rolling Hills Elementary School Parent - Teacher Association in Fullerton, Nortronics Anaheim will actively participate in a PTA-sponsored Space Day at the school this Saturday.

Highlighting the display will be a detailed scale model replica of the OV2-3 space satellite.

Flight Testing Scheduled For Navigation Equipment

Flight testing of the Nortronics-built Inertial-Doppler Navigation Equipment (IDNE), to be installed in the USAF/Lockheed C-5 Galaxy, is scheduled to begin in about two weeks, shortly after rollout of the huge craft itself, just three days from now at Marietta, Georgia.

While the C-5 is being readied for flight, a C-141 Starlifter is being fitted out as a "test bed" aircraft. It will be sent aloft with a complete guidance subsystem—including the IDNE—installed on easily removable pallets. The IDNE's Doppler radar flight testing has already begun.

The plan is to test the complete guidance subsystem in advance of its installation into the C-5, by simulating the actual airborne environment and navigational problems the subsystem will face in the C-5. The MADAR subsystem — including the Nortronics MADAR computer—will also be tested.

Once in the air the C-141, in its simulation flight of the C-5, will fly over specific pre-established routes with fixed points that will be easily identifiable from the air.

The significance to Nortronics of this test flight is that with the C-141 fully instrumented, all the navigational problems the C-5 IDNE will have to solve will be simulated in this checkout on the C-141.

Four Nortronics personnel will

(See C-5 TESTING, page 6)

Stevens Outlines Growth Through Cost Control

"Future business will go to those who prepare themselves—who do their homework—and who take positive steps in the area of controllable costs. I am confident we have this capability in our seasoned management team here at Nortronics."

These were the words and the challenge of Frederick Stevens, vice president and Nortronics general manager, last week as he outlined the projected progress and growth of the Nortronics Division in his speech to the California Nortronics Management Club at their initial dinner meeting of 1968 at the Elk's Club in Long Beach.

Mr. Stevens, whose address

(See COST CONTROL, page 6)

PHOTOS TO GUAM

Miss Weismann, Perfume and the Proteus

Posing for photographs isn't part of the job description of Myrna Weismann, warehouse control clerk at Nortronics Anaheim.

But there she was one day last week, away from her typewriter and in front of the lens, posing prettily for personnel of the Proteus Supply Department in Guam. And with the sanction of her supervisor, Bill Sturm, in Anaheim's Shipping and Container Engineering.

It all started a month or so ago when Miss Weismann, neat typist that she usually is, accidentally splashed a few drops of her "White Shoulders" perfume onto a Form DD-250 which she was typing to be included with equipment being shipped to the USS Proteus. The ship is a submarine tender to the Polaris squadron in the Pacific.

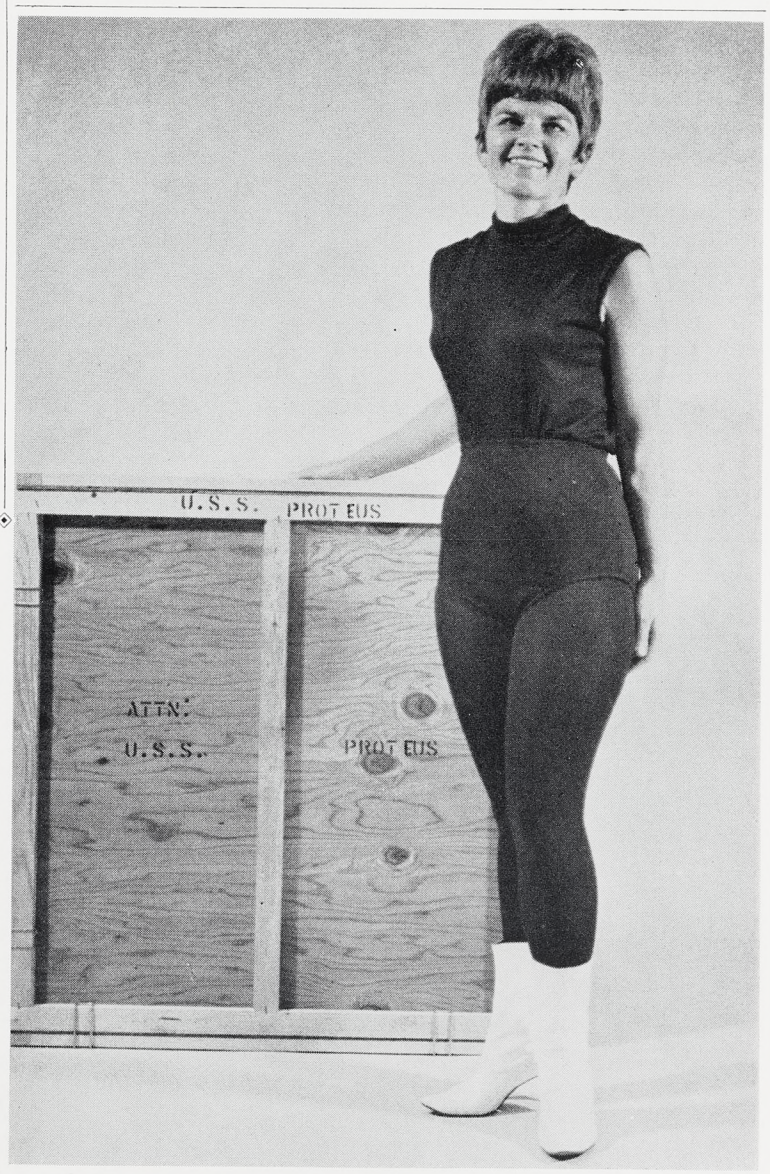
The receipt of that particular parcel must have met with overwhelming approval, for the return mail brought an immediate reaction from the men of the Proteus.

In a letter addressed to the attention of "The Lady Who Spilled Her Perfume," the men rejoiced at the scent of a "very feminine fragrance" which "aroused the curiosity and interest of all our eligible bachelors." Unknown to Miss Weismann, her slip of the vial had inadvertently "improved morale tremendously and conjured up fond memories . . .," according to the anxious letter.

The writers went on to inform Commander H. M. Thompson, director of the Defense Contracts Administration Services District —who received the letter and passed it on to Nortronics—that the "DD-250 will forever occupy a hallowed place in the files of the Proteus Supply Department."

When the letter came to the attention of Doug Leavenworth in Product Support at Anaheim, he followed the scent to Shipping and located Miss Weismann. Now plans are afoot to supply each of the interested store keepers — which rank the men bear — with their personal color photo of their newly found morale booster.

Miss Weismann was totally unaware of the response her form (DD-250) had gotten, but modestly agreed to pose for pictures to be sent to the guys in Guam, saying, "I've never posed for anyone or done any modelling in my life . . . and the closest I've been to a submarine is at Disneyland."



USS PROTEUS PIN-UP Myrna Weismann, a Nortronics Anaheim warehouse control clerk who accidentally spilled perfume on a packing slip, is now the toast of Guam. Pin-up photos of her are on the way to members of the Proteus Supply Department as a result of the demand created by the Control Division who got a whiff of the invoice while recently unpacking a shipping crate from Nortronics.

Bill Warwick; Pilot And Aircraft Designer

Unless it's raining, don't try to contact Bill Warwick on weekends.

Because, weather permitting, the 18-year Northrop employee is out of town every Saturday and Sunday, piloting one of his two homebuilt airplanes throughout the western states.

"I've been to just about every airport in the west," Mr. Warwick said. "I have a boat at Lake Havasu, and I fly there quite often. Or I'll head for San Francisco or Las Vegas—anywhere I feel like going."

Mr. Warwick has been a pilot since 1949, and has been designing and building airplanes for 10 years. Twice—in 1960 and 1967—his planes have won the Outstanding Design Award, presented annually by the Experimental Aircraft Association (EAA), of which he is a member.

Mr. Warwick, a bachelor, is a senior laboratory technician in the Norair Engineering Laboratories.

In 1950 and 1951, while in the Army, he flew as a crew chief in Germany.

Back at Northrop and in civilian life, he continued flying, and then decided to build and fly a plane of his own design.

He lives in Torrance, not far from Torrance Airport, and admits:

"My car has never seen the inside of my garage."

He does all his subassembly work in the garage, and completes final assembly in the hangar at the airport.

He designed two versions of a single-seat craft he called the Tiny Champ. One of these was the 1960 EAA design winner. He later built a Thorp T-18 Tiger, and since has completed his single-seat Bantam, the 1967 EAA winner.

Early this month, he was asked to display the Bantam in a program, "A Night in Aviation History," at the Proud Bird Restaurant near Los Angeles International Airport.

Mr. Warwick flew the plane from Torrance to Los Angeles, and then taxied it to the restaurant parking lot. He was to have flown back to Torrance after the program, but a low cloud ceiling forced him to wait until the next day.

He considers himself both a pilot and a builder of airplanes, but admits that piloting rates a slight preference over building.

He has flown his planes as far north as the Canadian border, as far east as Illinois and as far south as Dallas. This summer, he'll enter Canada to compete in an aviation convention and show in Abbottsford, British Columbia.

"I've been to the EAA meeting for eight consecutive years," Mr. Warwick said. "I thought I'd go to Canada for a change."

OVER ILLINOIS — Northrop's Bill Warwick pilots his homebuilt Thorp T-18 over rural Illinois on the way to the Experimental Aircraft Association's annual meeting in Rockford. Mr. Warwick has been building airplanes for 10 years. He still owns the Thorp.

HIS LATEST PROJECT—Bill Warwick (left) talks with newsman Clete Roberts, as they stand beside Mr. Warwick's Bantam, which he designed and built. Mr. Roberts was master of ceremonies at a recent dinner, at which Mr. Warwick was asked to display his airplane.

Northrop Men Fill Roster of Top-Rated Team

When the Hawthorne Hustlers take the field in Western Softball Congress action there is a definite "Northrop air" about the diamond.

That's because five starters, the general manager and the team publicist are Northrop Norair employees.

Greg Halberg, Contract Administration and Jack Jones, A.O.C. Operations are pitchers; Terry Birdsall, Factory Operations, is the catcher; Bill Greene, Product Support, plays second base; and John Monson, Maintenance, is an outfielder. Monte Halberg, Factory Operations, is the general manager and Ray Hofius, Product Support, is the publicist.

The Hustlers are the top-rated team in the area and compete against teams from Anaheim, Long Beach, Lakewood, La Mesa, Las Vegas, Oxnard and San Diego. Western Softball Congress teams have won six of the last nine world championships.

Area merchants and businesses support the team and all games are free to spectators. They are played locally at Prairie Park in Hawthorne. Tryout and preseason games are played in March with the initial home game, against La Mesa, set for April 13 in Hawthorne.

This is the second year of action for the Hustlers. After a slow start last year, they won eight of their final 14 games.

Gun Club Schedules March 14 Shoot

The Los Angeles Gun Club, Redondo Beach, will be the scene of an NRC Gun Club shoot March 14. Practice rounds will be fired from 6:30 to 7 p.m. with .22 events at 7 p.m. and center fire action at 8 p.m.

Participants are to bring their own guns and ammunition. Trophies will go to the highest scorer in each category.

The match will include firing 10 rounds slowly, 10 at a timed speed and 10 in rapid fire. A business meeting, and the awarding of trophies, will follow the match.

Penrod Elected President By Credit Union Board

J. S. Penrod of Northrop Nortronics has been elected president of the Northrop Credit Union for 1968 highlighting the activities of a board of directors named earlier this month by shareholders.

Serving with Mr. Penrod as a Credit Union officer will be Mary B. Delaney, secretary-treasurer.

In other action, the board selected H. L. Cook to chair the Credit Committee which includes J. L. Dew and F. E. Wolfe as members and G. W. Thornton to chair the Supervisory Committee with A. W. Johnson as secretary. Other members of this committee are E. R. Foord, H. J. Grothmann and H. A. Ralles.

The board of directors is comprised of Mr. Penrod, Mrs. Delaney, L. L. Cripe, D. H. Grothe, R. D. Hampton, J. J. Richardson, W. D. Schramm and L. W. Monger.

The board also re-appointed office staff members to serve for another year.

They include: Mrs. Delaney, treasurer-manager; William H. Morris, assistant to the treasurer; Mary D. Josalle and Florence Montgomery, assistant treasurers; Kay Walker, cashier; Peggy Faubion, loan officer; Nellie Boener, accountant; Helen Walker, membership chairman; and office staff members Jean Muira, Dean Perschy, Norma Thomas, Linda Forstrom and Wilma Robinson.

The Northrop Credit Union annual report is now being compiled for 1967 and will be distributed to all shareholders in March or April.

Earlier this month, it was announced that shareholders will receive a dividend of 6¼ per cent on their savings. The dividend will be applied to shareholder accounts on record November 30. The quarterly statements will be distributed April 1.

Alaska, Hawaii Among Tours Set By Travel Club

Northrop Travel Clubs have revised their group tour plans for the coming year.

The move will help Northrop families stretch their travel budgets and at the same time aid in stemming the flow of U.S. dollars overseas through tourism.

The four group tours selected by NRC Travel Club commissioners from Norair, Nortronics and Ventura Divisions will be within the Western Hemisphere and therefore not subject to taxation as overseas tours.

Plans for each tour are being finalized and brochures describing them will be available for distribution shortly through Personnel Activities outlets.

Briefly, they involve a May tour of the Caribbean, a September visit to Alaska, the annual yearend holiday trip to Hawaii and an early 1969 (February) trip to South America.

The Hawaiian trip will be eight days long. An optional extension will enable travelers with vacation time remaining to stay in the Islands for 12 days.

JAPANESE STUDY TEAM—For the second time in a year, a Japanese study team has selected the Northrop management development program for observation as part of the team's month-long tour of U.S. industrial operations. John B. Rushmer (left), director of Management Development, briefs 18 representatives of Japanese industry during their visit to the Northrop Corporate office.

SPANISH VISITORS — This quartet spent a busy week this month touring Northrop facilities for talks with key officials. They are (from) left) Jose Cerverra, plant manager, and Antonio Morino, chief engineer, for CASA's plant at Sevilla, Spain; Paul Jacobs, Norair program manager, SF-5; and Major Luis Gil Colomer, Spanish Air Force.

Spanish Officials Visit Northrop Facilities

Northrop Corporation was host this month to three Spanish officials for a busy week of discussions and fact-finding visits to Northrop facilities and the plants of select Northrop suppliers.

Sr. Jose Cerverra is plant manager and Sr. Antonio Morino, chief engineer at the Sevilla Plant of Construcciones Aeronauticas, S.A. (CASA). Major Luis Gil Colomer is the Spanish Air Force senior representative for the Tabalado District of Spain in which the Sevilla CASA facility is located.

CASA is the Spanish aircraft firm licensed by Northrop to build the Northrop F-5 tactical fighter for delivery to the Spanish Air Force.

In addition to talks with Northrop President Thomas V. Jones, Vice President F. W. Lloyd, P. A. Jacobs, SF-5 Program manager, and other Northrop officials, the visitors toured Northrop facilities at Norair, Ventura and Nortronics Anaheim.

The visitors were primarily concerned with familiarizing themselves with manufacturing methods and processes as they relate to the production of F-5 tactical fighters.

CASA has the contract to build 36 F-5's and 34 F-5B's.

Stock Shares To Be Listed In Midwest

Trading began this week on the Midwest Stock Exchange for Northrop Corporation common stock and $1.45 cumulative preferred stock.

Northrop common stock also is listed on the New York and Pacific Coast Stock Exchanges, and the preferred stock is listed on the New York board.

The new listing was made as a convenience to brokers and investors in the area served by the Midwest Stock Exchange, which includes the metropolitan centers of St. Louis, Chicago, Minneapolis, St. Paul and Cleveland.

Northrop gained more than 4,000 shareholders in 1966 as a result of the acquisition of the Hallicrafters Company of Chicago. Many of these shareholders live in the midwest.

AIAA Warns Youngsters of Rocket Dangers

The American Institute of Aeronautics and Astronautics has announced it endorses the use of model rockets for youngsters interested in rocket experiments, but continues its strong disapproval of homemade rockets.

The AIAA, in guidelines issued to its 67 sections across the country, said:

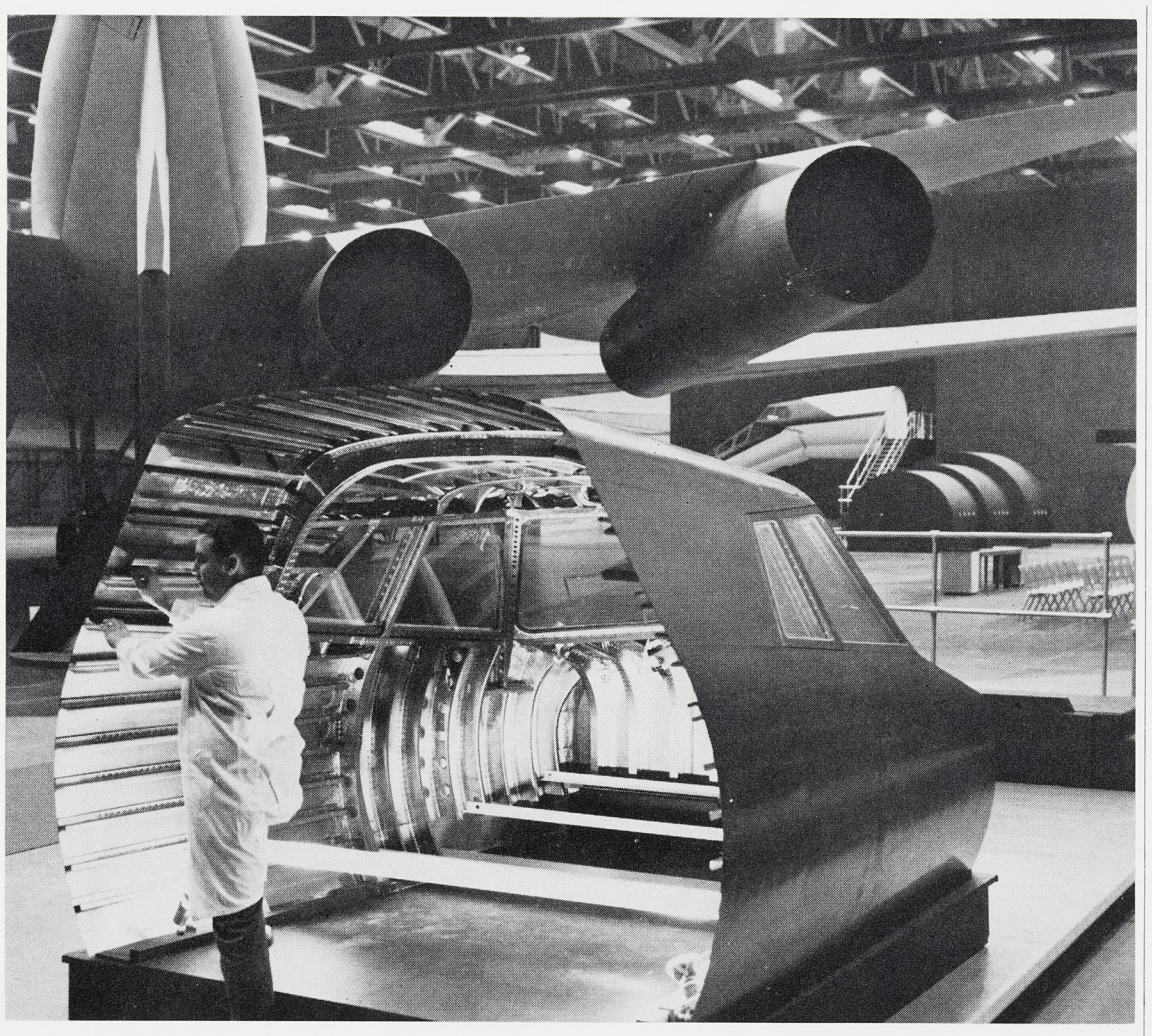
"Amateur rocketry, using experimental rockets made of metal tubing and powered by home-mixed propellants, is not encouraged or endorsed.

"Many propulsion experiments can be conducted without pyrotechnics. Carbon dioxide, water and other fluids can be used to demonstrate rocket principles."

Trap, Skeet Club Sets Target Shoot

Northrop Trap and Skeet Shooting Club members will gather at the Golden Valley Gun Club March 14 for a monthly shoot.

Signups will be taken from 9:30 a.m. to 12:30 p.m. with the first squads on the line at 10 a.m. Fifty trap and 50 skeet targets will be thrown for an aggregate of 100 for the day. Trophies will be awarded in each of five handicap classes.



SUPERSONIC SCENE—Full-scale mockup of America's Supersonic Transport (SST) at The Boeing Company looms above an all-titanium pilot's compartment built for test purposes. Norair fabricated the majority of 843 detailed parts it contains in Production shops and Manufacturing Research and Development. Norair also produced three special titanium wing boxes for use in test programs on the SST. The jet will reach speeds of 1,800 m.p.h.

Blood Donors Sought For March 6 Drive

Volunteer blood donors from throughout Northrop's Hawthorne complex are being signed for a two-shift bloodmobile visit set for March 6.

First shift donations will be accepted from 9 to 11 a.m., noon to 2:30 p.m., and second shift from 4:30 to 9 p.m. at NRC Clubhouse, Hawthorne.

Sustaining members of the Northrop Blood Program (there are more than 400 of them) will be scheduled automatically. Those desiring to join this select group as well as those who want to give once are now being solicited. Contact your department clerk.

Airplane Club To Meet

Northrop's Model Airplane Club will stage a "Hurricane Contest" from 9:30 a.m. to 1 p.m., March 10 at the Los Angeles Model Airport in the Sepulveda Basin. Trophies will be presented in several events.

T.V. Jones Elected to Stanford Post

Northrop President Thomas V. Jones has been elected to the Board of Trustees of Stanford University.

Mr. Jones is a director of the Stanford Research Institute and a member of the School of Engineering Advisory Council. He received a bachelor of arts degree in engineering from Stanford in 1942, graduating with summa cum laude honors.

He is trustee of the California Institute of Technology, and a member of the UCLA Arts Council. He has been a Stanford Associate since 1965.

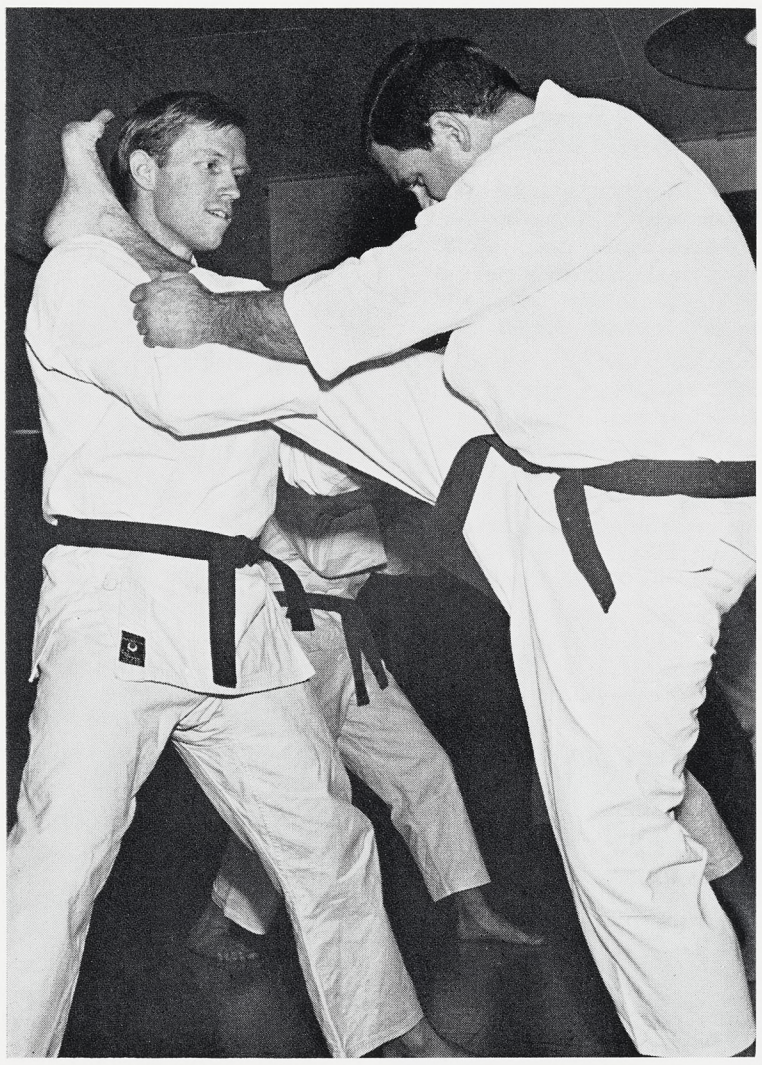
Mr. Jones also is a director of the Times Mirror Company and the Los Angeles World Affairs Council.

Show Tickets Available

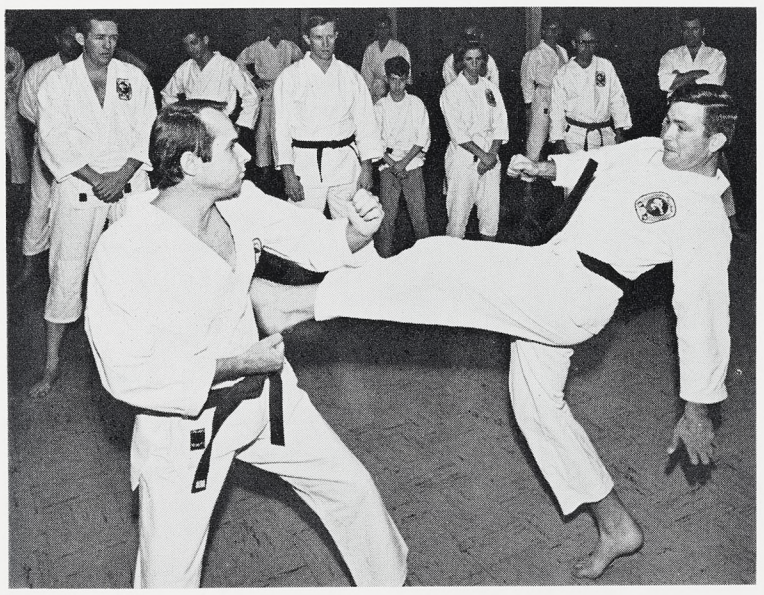
Northrop Recreation Clubs have obtained a block of 500 orchestra seats for the 5 p.m. April 13 showing of the musical "Half a Sixpence" starring Tommy Steele.

Regular $3 reserved seats are now available for $2.40 each through Personnel Activities outlets at all Northrop facilities.

TOMORROW'S LEADERS learn something of today's business as Grant Gunderson, chief of the Production group at Anaheim, explains the basics of manufacturing to sixth graders from the Harbor View Elementary School at Corona del Mar. The 60 young students and their two teachers were divided into small groups, presented with safety glasses and given a Nortronics plant tour as a field trip to supplement studies concerning manufacturing.



JUST WARMING UP—Physical conditioning is very much a part of NRC-sponsored Karate instruction. Going through a warmup routine are Hank Frost (left) and Dave Sampson. Classes, meeting Monday and Wednesday (5 to 6 p.m.) are open to men and women.



KEEP YOUR BALANCE—Instructor Willie Norris, a Norair Graphic Services employee, delivers a front kick aimed at John Anderson, assistant instructor, in demonstration. Mr. Norris is one of the top 10 heavyweight Karate experts in California, holder of a Black Belt, and winner of many competitions.

FIGHTING STANCE — NRC-sponsored Karate class goes through a preliminary warmup by taking a fighting stance. Karate is one of the oldest forms of self-defense known. NRC classes stress personal defense and physical and mental conditioning.

PHOTOS BY IKE MURATA

NO CREAM PUFF HERE — Petite Diana Jolsin combines facial and leg action to demonstrate a Karate defensive move with Instructor Willie Norris as NRC-sponsored class looks on. Miss Jolsin is a top student among groups that meet two evenings each week at NRC Clubhouse, Hawthorne. All Northrop employees are eligible to attend the classes. Mr. Norris said interest among second shift employees may lead to the formation of a Saturday morning class.

POPULAR NRC CLASS

Karate—The Study of Self-Defense

Willie Norris is the type of man you like to have around.

At Northrop Norair, where he works as a Graphic Services stock clerk, he is known as a young man with a pleasing disposition and infectious grin. They blend well with his neat, trim-cut collegiate-like appearance.

This outward appearance is deceptive in that he may also be compared to an armored Brink's truck—thoroughly protected and virtually impossible to push around.

Mr. Norris is a Karate expert, holder of a Black Belt, a veteran instructor, winner of five of the last six competitive events he has entered, and one of the top 10 heavyweights in California.

Two evenings each week (Monday and Wednesday, 5 to 6 p.m.), Mr. Norris conducts an NRC-sponsored Karate class at NRC Clubhouse, Hawthorne, open to all Northrop families, men and women, from 8 to 80 years of age.

The class has a single objective —to teach self-defense.

Karate is self-defense, one of the oldest of the oriental defense methods. It is an ideal art for women alone or individuals charged with the protection of a family.

Paramount consideration is given physical conditioning, body toning and basic skills. Mental conditioning, quick reflexes and self-confidence follow.

"Our classes are open, no beginning or end. Students come and go, free to remain as long as they like," Mr. Norris says.

Mr. Norris learned Karate from his older brother, Chuck, a former Norair employee, who picked it up while serving in Korea. The brothers now operate a school in Torrance, the only school in the greater Los Angeles teaching the Korean Tang Soo Doo method, one of several forms of Karate.

Chuck Norris is a three-time world champion in Karate competition who travels around the world to compete. He also assists in teaching the Northrop classes, especially in conducting examinations required to advance from one level to another.

Willie and Chuck Norris consider competition to be more of a sport than anything else. They consider instructing in self-defensive to be their real calling.

Spectators are invited to the classes, Mr. Norris said.

There has been significant interest in the class among second shift personnel, and a Saturday morning class may be added for second shift employees.

Additional information may be obtained by calling Mr. Norris on Norair ext. 4581.

LIKE A CAT — Although Instructor Willie Norris is well above the floor as he delivers flying side kick at John Anderson, assistant instructor, he will wind up on his feet. Karate classes teach such maneuvers only as a means of self-defense for individual students.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

For Sale

Renault, 1963 R-8, $400. 714-879-0094. A

MG Midget, 1963, $850. 677-6987. A

Ford, 1956 2-dr. h/top, new eng., tires & battery, $300. 714-549-2763. A

MGA, 1959 roadster, concourse, wire whls., many extras, $800. 676-4050. A

T-Bird, 1960, new generator, water pump & fan belts, air cond., heater, $800. 673-2559.

T-Bird, 1959, under 40,000 miles, $750. 678-0766. A

Wheels, 5 Porsche w/Michelin tires, $60 or $15 ea. & Porsche hub caps, $3 ea., 596-3691. A

Cobra GT-500, customized, $6,500. 273-0488.

Mercedes-Benz, 1957, 220S, 4-dr. sedan, $400. 375-0449. A

Oldsmobile, 1960 station wagon, air cond., auto. trans., p/s, p/b, $275. 326-1146. A

Ford, 1963 convt. XL500, new paint & tires, $995. 869-4608. A

Motorcycle, 1967 Harley-Davidson XLH sportster, elec. starter, $1,469. Box 401. A

Station Wagon, 1963 Falcon Deluxe 4-dr., new clutch & brakes, $650. 883-7542. A

Corvette, 1965 Fastback, AM-FM, 4-spd., 3:36 positraction rearend, p/windows, $2,900. 370-4316. A

Corvair 700, 1961, Powerglide, r/h, $375. 324-0847. A

Oldsmobile, 1963 Super 88 Holiday, 4-dr. sedan, fact. air, p/s, p/b, p/w, radio, $1,225. 375-3914. A

Van, 1964 Dodge Compact, 6-cyl. stick, r/h, camper windows, $950. 714-539-9964. A

Oldsmobile, 1966 Starfire, p/b, p/s, p/w, b/seats, console, fact. air, $2,975. Box 402.

Volkswagen, 1962 convt., eng. reblt., new brakes, clutch, & tires, solid-state radio, $900. 478-7100. A

Studebaker, 1931 Commander, 4-dr., $650. 467-0319. A

Triumph, 1956 w/1961 eng. & trans., new clutch, needs body work & paint, $300. 324-3813. A

Station Wagon, 1955 Rambler, $60. 374-4703.

Cadillac, 1963 coupe, air cond., new paint, $1,800. 323-3051. A

Volkswagen, 1964 sedan, $1,000. 422-4942. A

Volkswagen, 1956, r/h, $370. 327-4441. A

Chemical Toilet, flush-type, Corlon convt., for camper, trailer, supply of chemicals, $50. 644-2401. A

Lawnmower, Sears Reel, used twice, $90. 377-7670. A

Airplane Propeller, fully controllable, Sensenich skyblade, zero time s.m.o.h., for 125 h.p. Lycoming eng., $250. 327-2621. A

Arc Welder, 300 amp., Crosley eng. powered, $125. 677-4410. A

Power Mower, Craftsman, reel-type, $20. 347-0298. A

Twin Beds, box springs, mattresses, triple dresser & night stand, provincial, mahogany, $170. 672-2723. A

Furniture, 3 rooms fully furnished w/23″ TV & 14 cu. ft. refrigerator, $500. 644-4823. A

Crash Helmet, Bell, grey, visor, size 6¾, $20. 397-2055. A

House, 4-bdrm., block wall, patio, bltin barbecue, fireplace, $29,900. 320-6975. A

Organ, Conn minute deluxe w/bench, $1,250. 675-0521. A

Honda, 1966 CL160, $325. 373-3669. A

Stereo Tapes, 8, classical & popular, reg. $3.50; twin pack $5. 323-6795. A

Surfboard, Rick, 9′4″, $50. 325-5875. A

Headboards, 2 matching, twin size, bookcase-type, $10 ea. 329-4559. A

Bicycle, Sears 10-spd. racer w/speedometer, $25. 676-8816. A

China, Wentworth, Silver Wheat pattern, service for 8 incl. snack set w/cups, never used, $80. 676-6303. A

Dog, Great Dane, male, 1 yr. old, ears cropped, house broken, $100. 672-3387, 677-9187.

Mini-Bike, Rupp Continental, new 3½ h.p. Tecumseh eng., $125. 714-494-6940. A

Sander, Sears Craftsman, dual motion, industrial-type, $25. 756-9697. A

Piano, Vose & Sons, ¾ upright, mahogany, $200. 675-7729. A

Lens, 135mm f:3.5 auto. Schneider for Exakta, $45. 835-3869. A

Boat, 19′, 1965 Glastron V195, Mercruiser 150, power tilt, sleeps 4, marine radio, 70-gal. fuel cap., tandem trailer, $4,200. 323-6366. A

Slip Lot, Salton Sea, roads & utilities in, south side of sea, near yacht club, $7,100. 714-535-1694. A

Track Shoes, boy's 9½, w/removable spikes, $5. 325-2292. A

For Sale

Trail Bike, 1964 Yamaha 80, $250. 323-9598.

Vacuum Cleaner, Eureka canister w/attachments, $10. 672-5545. A

Guitar, grand concert size, rosewood back, ebony fingerboard, $200. 377-2634. A

Motorcycle, 1965 Harley Davidson, 50cc, extra sprocket & chain for dirt riding, $105. 377-4943. A

Ski Boots, men's, size 10½ & Austrian metal laminated skis & trappings, worn once, $50. 343-6213. A

Acreage, in Apple Valley, $200 dn., 1% mo. on unpaid bal., $4,800 ea. for 5 or $9,300 for 10, 327-3616. A

Range, elec., 4-burner, full size, $15. 323-6794. A

Encyclopedia Britannica, cost $500, $380. 466-4657. A

Camera, preset Travenar, f3.5 x 135 mm, $20. 377-4019. A

Lot, 50 x 110, $3,500. 783-5117. A

House, in Hesperia, 2-bdrm., cpts., fireplace, bltins, dps., lge. gar. w/guest room & ¾ bath, 1 acre lot zoned R-3, close to new lake, $14,900. 644-3803. A

Movie Camera, projector & film splicer, $75. 714-539-2098. A

House, 4-bdrm., Wilmington area, sell for equity of $1,700 dn., assume existing loan, $28,750. 835-9238, 714-540-7283. A

Distributor, Dupoint for Plymouth 318 eng., $25. 714-535-6296. A

Acreage, 5 acres, Hemet area, near Homeland on Hwy. 74, $35,000. 714-642-2616. A

Board Fence, 450 sq. ft., used redwood, 4x4 slotted posts, gate w/hardware, $20. 370-7092. A

Cartop Carrier, Sears Deluxe, 48″ fits any American car, $25. 323-3796. A

Curtains, 20 panels, 62″ x 24″, brown & white Hawaiian-style cotton print, $15. 379-3487. A

Battery, heavy duty marine 175 A.H., 3 mos. old, $10. 672-7424. A

Residential Lot, fully improved, near elementary school, $19,950. 375-0867. A

Honda, 1967 Scrambler, 400 miles, $250. 324-6155. A

Ring Set, engagement & wedding, $200. 376-6182. A

House, in Playa Del Rey, 2-bdrm. & den, lge. living room w/fireplace, dble. gar., fenced yard, $36,000. 398-0012. A

TV, Zenith console w/remote control, walnut cabinet, 21″, b&w, $200. 651-0445. A

Boat, 15½′, Glenn L. Hull, seat & steering, $160. 675-6727. A

Camera, Leica, w/50, 90, 135mm lenses & accessories, $99. 679-2635. A

Honda 50, 1965, $115. 363-3843. A

Camper, 10½′ w/unloading jacks, 2-side dinette, sleeps 4, $950. 714-535-1016. A

Home, 3-bdrm., fam. rm., 2 baths, cpts., dps., h/wood flrs., bltins, fireplace, appraised $31,500, $29,500. 714-772-8345. A

Home, 3-bdrm., L.A. Harbor view, $33,500. 833-9455. A

Acreage, Willow Springs area, 5 acres, 330 x 660 corner, 3,300′ elevation, $20 dn., $20 mo., $2,000. 325-3057. A

Acreage, 2½ acres in Antelope Valley between Rosamond & Mojave, level, $35 dn., $35 mo. inc. 4% interest, $3,500. 378-1026.

Dining Room Set, olive green & white, $100. 329-6553. A

Engagement Ring Set, ladies' 18K white gold orange blossom solitaire diamond w/ brilliant cut diamond weighing .74 ct., appraised at $1,100, $500. 672-5286. A

Honda 50, 1964, $100. 378-4676. A

Power Lawn Sweeper, Craftsman 28, Briggs & Stratton 2 h.p. 4-cycle gas. engine, $37. 714-528-7636. A

Acreage, 2½ acres, near Lake Isabella, electricity, level, $3,500. 714-532-1361. A

Transmission for 1936 Cadillac, Series 60, $10. 758-9182. A

Band Saw, Craftsman, 12″, w/steel stand & motor, $75. 633-6082. A

Acoustical Guitar, custom made by Jose Oribe, $70. 373-4147. A

Rims & Tires, 4 chrome, 14″ for Chevrolet, $95. 324-8618. A

Volkswagen, 1963 sunroof, radio, new tires, paint & shocks, $850. 423-5646. A

Austin Healey, 1962 Mk. II 3000, o/drive, wire wheels, $1,195. 477-7314. A

Oldsmobile, 1960 Super 88 4-dr. sedan, air, p/s, p/b, newly replaced parts, $300. 788-8541. A

Renault, 1964 4-dr., r/h, 4-spd. shift, 40 h.p., 4 whl. disc brakes, Michelin tires, $550. 783-8271. A

Chevrolet, 1955 Nomad, 3-spd., 4-barrel, $400. 329-9484. A

Corvette, 1967 Fastback, p/s, p/b, a/c, 4-spd., 350 h.p., AM-FM radio, wide oval tires, $4,250. 679-7325. A

Pups, German shepherd, purebred, from champ. stock, $30. 320-6990. A

Poodle, miniature, silver, AKC reg., 11 wks. old, has shots & clipped, $75. 714-546-0752.

T-Bird, 1963, full power & factory air, $1,200. 325-3724. A

Boat, 14′ runabout, trailer, 30 h.p. Mercury eng., $320. 671-8672. A

Rug, 12x14, rose beige, 2 yrs. old, $75. 674-4563. A

Shotgun, Browning superpose 12 gauge, 3″ magnum, 30″ barrel, $335. 379-4587. A

For Sale

Ford, 1961 V-8, 2-dr., r/h, auto. trans., $425. 328-3306. A

T-Bird, 1955, all power, $1,300. 292-8059. A

Desk, walnut, office size, glass top incl., $50. 679-6215. A

Sailboat, 16′ Pearson Hawk, fiberglass, dacron sails, trailer, extras, $1,200. 375-1380. A

House, 3-bdrm., 2 baths, 8 min. to Northrop, fenced yard, cpts., dps., 5¾% financing, $31,500. 377-3532. A

Toyota, 1966 Corona, auto. trans., citizens band radio, $1,800. 320-4823. A

Oven, child's, $3. 379-5690. A

Dodge, 1959 Coronet, 2-dr., new tires, $250. 714-525-4365. A

Bus, 1962 Greenbrier, good tires, r/h, 3rd seat, $300. 675-1291. A

Porsche, 1956 Speedster, o/hauled, new top, $1,250. 438-8331. A

Lot, ⅛-acre, Hollywood Riviera, $15,000. 672-4450. A

Ski Pants, ladies', White Stag, never worn, size 14S, black, $12.50. 329-6728. A

Kitchen Sink, coppertone, 3 sectional, disposal in middle, all connections, $100. 582-1079. A

Pup, miniature dachshund, male, 7 lbs., red, 1½ yrs. old, AKC, shots, $60. 714-828-8939.

Living Room Set, 5-pc. made by Kroehler, $210. 714-892-5801. A

Comanche 180, 1958, new annual Narco MK 12A w/VOA4, MK 2 omnigator, a.d.f., full gyro panel, 160 m.p.h. cruise, $8,900. 375-0615. A

Tires, 2 1200 Indy, w/racing tubes, $80. 379-4075. A

Chevrolet, 1958, 4-spd. Munzie 4:11 positraction rearend, stereo record player w/ vibrasonic speakers, many extras, $500. 379-5709. A

Cemetery Lots, 4 in the Eventide Sect. of Green Hills Memorial Park, inc. perpetual endowment care, $1,600. 376-4677. A

Ford, 1962 Country Sedan, r/h, $750. 372-1259. A

Pontiac, 1964 GTO, 4-spd., r/h, $1,200. 390-1619. A

Ford, 1959, 4-dr., auto,, $250. 635-3056. A

Ford, 1962 Fairlane 500, auto., p/s, $795. 882-0761. A

Pontiac, 1963 Catalina convt., p/s, p/b, r/h, auto., $995. 472-2722. A

Renault, 1959 4CV, w/'62 Dauphine eng., $65. 328-9064. A

Cessna 170, 1953, 650 hrs. s.m.o.h., Motorola M135 & Narco MK 1, $4,795. 633-2857. A

Bus-Camper, 1966 Volkswagen, cabana, r/h, many extras, $2,350. 324-7623. A

Station Wagon, 1958 Chevrolet, V-8, r/h, p/s, rack, $265. 479-5653. A

House, 4-bdrm., 1½ baths, bltins, block wall fence, dble. attach. gar., used brick fireplace, cpts., dps., 30 mins. from Norair, assume 5¼ FHA loan, $22,500. 714-897-9075. A

Washer, Kenmore, $25. 329-9982. A

Pickup, 1964 Chevrolet, ½-ton, V-6, r/h, stick shift, $1,095. 324-7841. A

Wiglet, medium brown, never worn, 9″ long, $7. 679-2319. A

Hide-A-Bed, Simmons, full size, slip cover, $80. 324-2992. A

Surfboard, Jacobs, 9′9″, $80. 372-3827. A

Station Wagon, 1956 Ford, $145. 329-6690. A

Washer, Lady Kenmore, auto., needs some work, $10. 671-2776. A

Bedroom Set, eastern-made, mahogany, full size bed, Mr. & Mrs. dresser, 2 end tables, $175. 789-0936. A

Mustang, 1965 convt., V-8, 225 h.p., factory air, p/s, wide-oval tires, many extras, $1,995. 676-3087. A

Dishwasher, G.E., portable, 3 yrs. old, stored & unused, $75. 378-0603. A

Vibrator, Sears, used less than 3 hrs., $19. 676-0938. A

Truck, 1962 Chevrolet, ½-ton w/Stahl Service body, new tires, valve job & major tune-up, $995. 564-2263. A

House, 4-bdrm., 2 baths, fam. rm., atrium, pool, all elec. kit., bltins, air cond., radiant heating, 5¼% loan, $39,500. 714-637-4461. A

Home, 3-bdrm., 5 min. from Norair, many extras, $3,500 dn., 5¼% G.I. loan, $24,400. 755-3676. A

Ford, 1957, 2-dr. w/406 eng., 4 mag. racing whls., 14″ Cragar w/slicks, custom steering whl., floor stick shift kit, many extras, $300. 581-5208. A

Dodge, 1967 Dart, p/s, 2-dr. h-top, r/h, $2,400. 752-4576. A

Mercury, 1956 h/top, good paint, need uphol., needs trans. work, $60. 542-3626. A

Chevrolet, 1959 Impala, big eng., 3-spd. floor shift, new trans. & brakes, $225. 329-6174. A

Washer, auto., 1962 Frigidaire, Imperial model, $25. 675-8813. A

Stereo Console, solid-state symphonic, walnut finish, 2 yrs. old, $150. 393-8521. A

Kitchen Sink, dble., white, $5. 370-4326. A

Guitar, elec., Tiesco Del Rey, 6-string, 1 pickup, $20. 377-5853. A

Refrigerator-Freezer Comb., General Electric, 14 cu. ft., rotary shelves, $50. 454-7338. A

Acreage, 10 acres, wooded, near Lassen National Park, low down pymt., $2,000. 467-9812. A

Bar, free-standing, walnut textured formica, 5′ long, 2′ wide, $72. 372-9954. A

For Sale

Edge Trimmer, elec., $15. 633-2395. A

Air Conditioner, fits Dodge Dart 6-cyl., 225 Ranger eng., $40. 372-5336. A

Home, 3-bdrm., 2 baths, fam. room, htd. pool, decorated, landscaped, $34,750. 431-0250. A

Wheels, 4 '68 Corvette, covers & 4 G-70 wide oval tires, 15″, 7″ wide, $180. 754-7861. A

Baby Swing, 3 mo. to 18 mo., $4. 755-7166. A

MGA, 1957 Series 1500 sports convt., recent o/haul, $300. 531-9974. A

Car Cooler for Volkswagen, plugs into cigarette lighter, elec., $10. 370-7702. A

Water Softener, 4 yrs. old, $20. 324-9130. A

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., 1½ hrs. total time, $700; trailer, $125. Box 403. A

Wanted to Buy

Hide-A-Bed, Riviera, queen or king size. 377-1344. B

English Bulldog, must be healthy, alert, good disposition, papers not necessary. 805-498-2056. B

Revolver, .41 mag., S & W, model 57 or 58, 4″ or 6½″ barrel. 323-4257. B

Fiat 600, 1959 for parts, condition immaterial. 377-6193. B

Citroen, 2 C.V., 1961 to 1965, in good condition. 461-2503. B

Drill Press, 14″ or 15″, good condition. 378-4654. B

Closet, fairly large, portable. 644-3135. B

Drone Engine, 4318A. 320-3158, 328-4992. B

Bedroom Set, dble., maple, also dog house. 676-8833. B

Hard Top for 1957 T-Bird w/portholes. 294-2014. B

Western Saddles, adult, good condition. Box 404. B

Amateur radio equipment, #SB10. Box 405. B

For Trade

Books of Blue Chip Stamps trade for S&H Green stamps. 378-3529. C

Free (To Be Given Away)

Cat, Persian, male, & 2 pr. of bantams chickens. 377-1404. D

Rentals Offered

Apt, 1-bdrm., cpts., dps., bltins, all elec., 10 min. to Nort. P.V., 20 min. to Norair, $120 furn.; $105 unfurn. 375-2091, 375-9397.

Apt, 2-bdrm., furn., washer, dryer, 4 blocks to Northrop, inc. utilities, $150 mo. 833-2512. E

Duplex, 2-bdrm., front, close to Norair, $125 mo. 679-2456. E

Apt, single, newly furn., utilities furn., lady preferred, $60. 754-9866. E

House, 2-bdrm., bltins, cpts., dps., fireplace & yard, $150 mo. 372-5808. E

House, 3-bdrm., 2 baths, close to Del Amo shopping center, $225 mo. 372-9871. E

House, 2-bdrm., den, corrals, in Malibu Canyon, $185. 671-8401. E

Apt, 1-bdrm., furn., all bltins, pvt. deck, lge. pool, sub. parking, near Northrop, $140. 670-6084. E

Cabin, Green Valley Lake, $35 w/end, $55 wk. 320-2002. E

House, 2-bdrm., enc. yard, gar., cpt., dps., water paid, close to Norair, $145 mo. 676-3142. E

Apt, near King Harbor, cpts., dps., bltins, piped music, bltin vacuum, gar. w/storage cabinets, 1-bdrm., $115 & $120; 3-bdrm., 2 baths, $165. 372-8835. E

Rentals Wanted

House, duplex or apt., have 1 dog & baby, near work preferred, also w/yard. 674-2074.

Child Care Offered

Babysitting by 15 & 16 yr. olds, experienced, reliable, references, Torrance High School area, 50¢ hr.; 75¢ after midnight. 320-4726.

Child Care in my home, days only, infant to pre-school, reasonable. 371-3079. G

Personals

Flying Club, Torrance, wet rates, Cessna 150, 172 & Cardinal, $8, $10.50 & $16, Luscombe, Mooney & K Bonanza, $8, $16 & $21. 326-3213, 676-6138, 325-5288. L

10-Year Reunion, 1958 Leuzinger graduates, in May, call 644-5302. L

I wish to thank all my friends in Data Processing, Anaheim, for making my last day so pleasant. Thanks for the lovely gifts & cake. NORMA MURRAY. L

Typing done in my home, term papers, theses, executive type, reasonable. 676-1475. L

My sincere thanks to all my friends for making my last day at Northrop a memorable one. Also, for the wonderful gifts & the lovely party. VIOLA R. TIMMONS. L

For Sale or Trade

Boat, 14′ aluminum, Lone Star, $75 or trade for 12′ aluminum cartop boat. 714-839-5730.

TV, color, Packard-Bell, 21″, $295 or trade for portable color TV. 376-3229. M

Volkswagen Bus, 1964, $900 or trade for car. 325-7605. M

Lot, in Salton City, close to marina & shopping center, streets, utilities & sewer in, $3,250 or trade for late model ¾-ton Fleetside Ford pickup & o/head camper. 532-7846.

Buick, 1962 Special, 2-dr., $475 or trade for panel truck. 714-630-1914. M

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Glendale Blvd. & San Fernando Rd., Glendale. Richard S. Guevara, Norair ext. 2700, 247-5946.

7:30 a.m. — 4:15 p.m.

Marine & Highland, Manhattan Beach. L. Berg, Norair ext. 2763, 545-1662. A

For Sale or Trade

Rambler, 1962 American Custom, 2-dr., auto., r/h, $425 or trade plus cash for late model station wagon w/air cond. 714-527-1201. M

House, 2-bdrm., cpts., dps., detached dble. gar., fenced, 50′x150′, R-2 lot, $18,000 or trade $5,000 equity for good mobile home. 324-5422. M

Refrigerator, Servel, apt. size, 2½ yrs. old, $39 or trade for portable TV. 644-6198. M

Ford, 1956, $125 or trade for Honda 50 or Yamaha. 672-3170. M

Winners Named From February Golf Tournament

Results are in from the February 18-hole golf tournament at Nortronics Hawthorne, played on the Green River course in Corona, and, of 60 who participated, 12 have placed in the winners' columns.

Honors for low gross for the day were split three ways between Dick Wood, Jim Rutkoskie and Fred Woods, each with a 76. Meanwhile, Bill O'Toole registered a 59 low net.

Best of the first flight was Ray Jackson with a 63, followed by Dave Krieghoff and Dick Wood with 65's. Second flight leader was Ed Kong who netted 64. Lou Villalba's 66 was second best, with Bill Burch and Bob Martin knotting for third, each with a 68.

Bill O'Toole figured again as he won the third flight, just as he did last month at Elkins Ranch. His 59 bested the second place 62 of Ray Flynn and the 63 of third place Mark Reid.

All scores are low net.

Gem, Mineral Club Schedules Movie

The NRC Gem and Mineral Club at Nortronics Anaheim will meet at 7:30 p.m. Monday at the NRC Clubhouse in Fullerton.

Highlight of the evening will be the screening of a film on Intarsia, an art form similar to mosaic pictures, but done in the medium of gem rock.

Nortronics employees are reminded that the Club has a well equipped lapidary shop with instructions available for beginners. Unusual field trips and programs of special interest are featured throughout the year.

Carol Brittenham, Club commissioner, may be contacted on Anaheim ext. 495 for further information.

Budgeting, Costs Topic at Seminar

"Budgeting and Costing in Data Centers" was the topic of an address by S. S. Lotz, director, Northrop Data Processing Operations section, to the American Management Association's three-day seminar in Los Angeles last week.

Title of the seminar was, "Principles, Practices and Problems in Supervising Data Processing Operations."

In his one-hour speech before the group, Mr. Lotz discussed methods used by Northrop Data Processing in establishing an annual budget. He also outlined the manner by which costs are identified and reported.

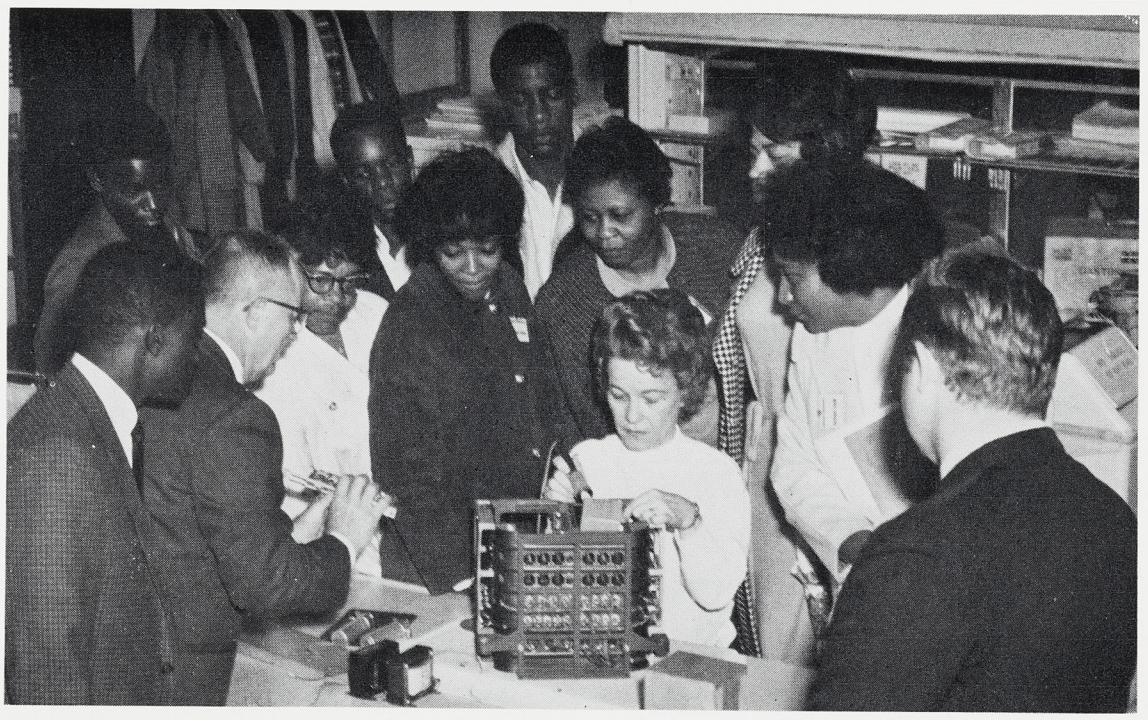
Electronics Students Tour Hawthorne Production Area

High school and adult education electronics students from Centennial High School in Compton have toured Nortronics Hawthorne to view the production of electronic equipment, from its arrival at the receiving dock, through the final checkout as a completed piece of hardware.

The group was guided through the facility by the Navigation department's Chuck Shelly, general supervisor of Electronic Assembly, and accompanied by their instructor, Cecil Scott, a former Nortronics employee. Mr. Scott requested the tour to enable his students to more closely relate their classroom studies to industry requirements.

Mr. Shelly showed the class the latest developments in electronic procedures at Nortronics and stressed the importance of education as "the best way of gaining admission and advancement in the expanding electronics assembly field."

Centennial High offers a two year program in basic electronics for their eleventh and twelfth grades and a one year program in electronic assembly in their Adult Education Program.



ELECTRONIC ASSEMBLY TECHNIQUES are demonstrated to members of the Centennial High School twelfth grade and adult education classes. Chuck Shelly, general supervisor of Electronic Assembly, indicates how solid state components are mounted on a printed circuit board. Lucille Anctil (center), electronic assembler, further illustrates by soldering in a power supply. Cecil Scott (far left), an electronics instructor at the Compton school, arranged the tour to supplement the students' studies in electronics.

Scout Receives Highest Honor From Church

The highest Boy Scout honor of the Catholic church has been awarded to the son of a Nortronics employee.

Rick Adams, 12-year-old son of A. J. Adams, Facilities administrator at Nortronics Hawthorne, this month received the Ad Altare Dei Cross Award for having successfully passed the necessary tests. Rick's name will now be enrolled in the Archdiocesan Golden Book of Scouting.

Rick Adams

The Cross was presented to Rick and other Scouts receiving the award in a special ceremony at Saint Vibiana Cathedral by His Eminence James Francis Cardinal McIntyre of the Archdiocese of Los Angeles.

Rick is a Star Scout, and a patrol leader of the Flaming Arrow Patrol. He has earned five merit badges in Troop 330 of the El Camino District, San Gabriel Valley Boy Scout Council.

Service Awards Are Presented To 20-Year Men

Three Nortronics employees have completed 20 years of service with Northrop this month and have been presented service awards. Seven other 15-year employees also received recognition in February.

Those who have been with the company for two decades are Mark Anderson, Electronics Engineering unit, Hawthorne; Robert DeMartini, Mariner Mars Test and Operations group, Hawthorne; and Clay Enoch, Solid State Applications unit, Palos Verdes.

Fifteen-year veterans are George Cook, Herbert Felix, Louise McMeans, and Calvin Seay, all of Anaheim; and Earl Bird, John Foglio and Thomas Griffith of Hawthorne.

COST CONTROL

(Continued from page 1)

took the form of a slide presentation, made it clear to the more than 300 present that by meeting the challenge in the immediate years ahead, Nortronics will be contributing to the long range goal of growth and profitability.

He also pointed out that by reducing controllable costs as little as two per cent, Nortronics can reasonably expect a 50 per cent increase in profits in 1968 alone.

The general manager explained that much of Nortronics' future lies in identifying and acquiring programs in areas involving future needs of its market. He also stated that the division growth is directly associated with other elements of the company. Communication programs were highlighted by Mr. Stevens.

C-5 TESTING

(Continued from page 1)

be on hand for the flight testing: Jim Pickerill and Bill Finch from Systems Integration, and Jim Stephans and Jerry Colmery from Evaluation and Integration. Their job will be to assist the Lockheed-Georgia Company in IDNE flight test planning and test conduct and to offer any technical assistance pertaining to these or to data evaluation that may become necessary.

An essential element of the C-141 simulation program is the Nortronics-designed software for the two computers—the primary and the auxiliary navigation computers—that form a major part of the IDNE system.

Speech Winner Selected

Final competition in the Smoothsayers Toastmistress Club speech contest has this month been completed, and a Nortronics woman has won the top award.

Marguerite Dougherty, of Nortronics Advanced Avionics at Hawthorne, was selected by a group of judges from the academic and business community over five other finalists including Evelyn Hunter from Nortronics, and Norma Conrad of Norair.

Mrs. Dougherty

Mrs. Dougherty's winning seven-minute speech entitled, "Tightrope Walker" was a satire on attitudes of woman's role in society. She received the first place trophy and club winners' pin.

The Smoothsayers contest culminated months of preparation and speak-off preliminaries which were coordinated by the Speech Committee of Lucianna Clack, Norair, second vice president of the group; and Rene Pellatier, Youth Leadership member.

Mrs. Dougherty will now represent the Smoothsayers in the Area Speech Contest in competition with winners from 14 other clubs. This event will be at the Indian Village Restaurant in Torrance on March 13.

RECORD TOTAL PLEDGED TO AID

Nortronics employees have pledged a record $90,000 to AID-United Givers in the Orange County area and elsewhere in support of major health and welfare causes, according to Jack Steorts, Orange County AID vice-president.

In 12 years of pledging and giving, Nortronics employees have contributed nearly a half-million dollars to AID's charitable organizations. Pledges this year represent an increase of $13,000 over last year's donations.

Northrop employees' contribution this year is $329,000 making the grand total of giving $3.2 million since 1955.

In recognition of this outstanding Orange County performance, a special commendation plaque has been presented to Nortronics Anaheim employees by Mr. Steorts. Elmer Noonan, director of Industrial Relations for Nortronics, accepted the award.

A RECORD YEAR of giving is represented by this plaque, presented to Nortronics Anaheim employees by AID-United Givers Vice President Jack Steorts (left). Pledges by Anaheim employees this year reached an unequalled high of $90,000—which surpasses last year's contributions of $77,000. Elmer Noonan, Nortronics Industrial Relations director, accepts the award.

Anaheim Officials Sponsor Top Orange County Scouts

Nortronics Anaheim management representatives have sponsored seven Eagle Scouts at the Fifteenth Annual North Orange County Council Eagle Scout Recognition Dinner.

The purpose of the annual dinner is to honor the Eagle Scouts for their past accomplishments and to encourage them to continue their early efforts as they become contributing members of society. The event also provides the opportunity for each Eagle Scout to become better acquainted with outstanding business leaders who occupy positions closely related to their respective vocational goals.

The seven young men met with Nortronics officials in Anaheim recently for a plant tour, and personal discussions and counseling, followed by the recognition dinner at the Anaheim Stadium Club.

Hosting the Scouts were Danny Chung, director, Automation Systems section; Pat Foster, supervisor, Manufacturing Control; Gene Jessick, chief, Security group; Frank McNabb, director, Quality and Reliability Management; Jim Ricketts, deputy manager, Anaheim; Gerry Wajda, chief, Compensation and Training; and Walt Walker, service engineer, Product Support.

EAGLE SCOUTS HONORED at their Fifteenth Annual North Orange County Council Recognition Dinner, met with Nortronics management representatives for a tour and talks prior to the dinner. Sponsors of the boys were (from left) Frank McNabb, Gerry Wajda, Pat Foster, Jim Ricketts, Gene Jessick, Danny Chung and Walt Walker. The Eagle Scouts are (from left) Lewis Sharp, Darrel Contra, Harold Wood, jr., Michael McGraw, Craig Williams, Jim Reed and Kirk Walker.

NORTHROP NEWS

NORTHROP NORTRONICS

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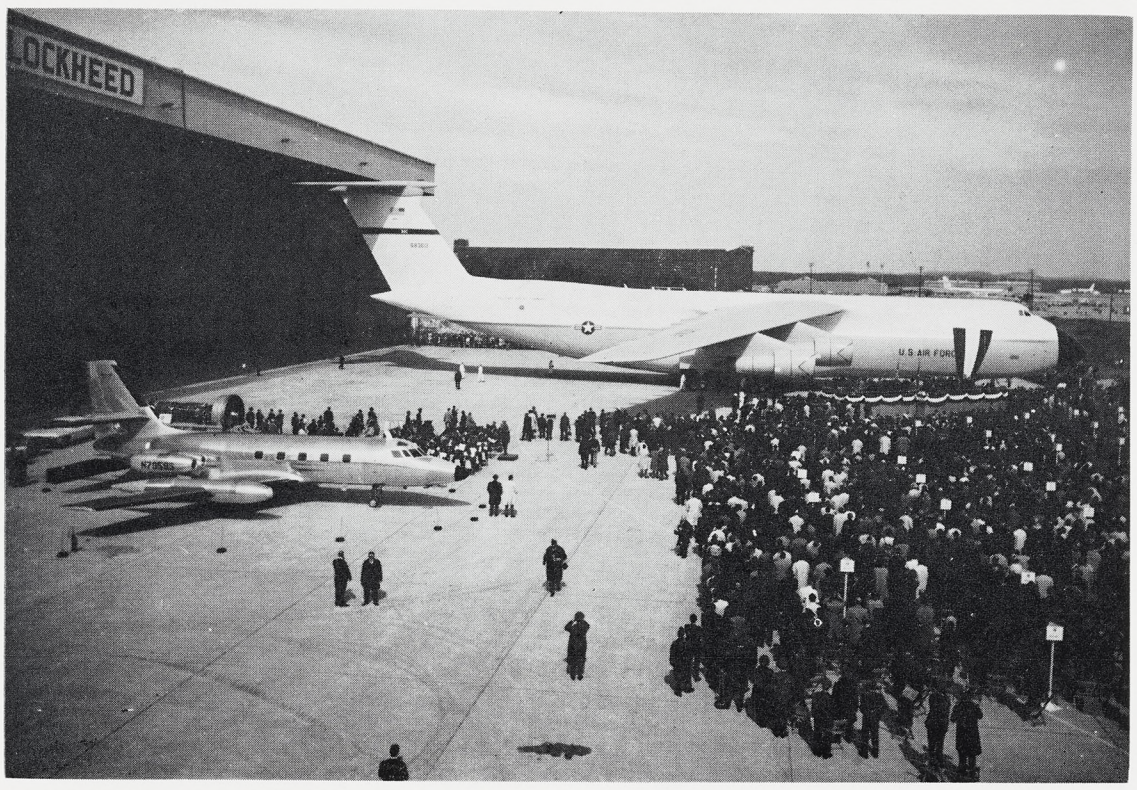


THE WORLD'S LARGEST AIRPLANE, Lockheed's U.S. Air Force C-5, dwarfs that company's C-140 Jetstar in the foreground as the huge Galaxy made its debut before 30,000 guests. A surprise visitor was President Lyndon Johnson, who flew in for the rollout ceremonies at Marietta, Georgia. The Nortronics Navigation department is building navigation and malfunction detection equipment for the massive Military Airlift Command troop and cargo aircraft.

World's Largest Airplane Unveiled in Ceremonies

The largest airplane in the world—U.S. Air Force's massive Lockheed C-5 Galaxy, which will utilize Nortronics navigation equipment—rolled into the Georgia sunlight for the first time on March 2 at Marietta, before the President of the United States and 30,000 other awe-inspired guests, including Lockheed employees.

The Nortronics Navigation department in Hawthorne is under contract to the Lockheed-Georgia Company to build the self-contained inertial-Doppler guidance system that will be able to navigate accurately and correctly establish aircraft positions under all weather conditions at any time.

Northrop Corporation and Nortronics Division officials were among the throng who witnessed the christening of the giant plane which was developed for use by the Air Force's Military Airlift Command. The huge airship was designed to have a cargo capability four times greater than Lockheed's C-141 Starlifter, the aircraft that was—before this month—the largest AF transport airplane aloft.

Guests in attendance from Northrop included Thomas V. Jones, Corporation president; Frederick Stevens, vice president and Nortronics general manager; Ross Miller, vice president and manager of Nortronics' Navigation department; Lloyd Balsam, Nortronics C-5 Program manager and Howard Sutherland, Nortronics Marietta representative.

The maiden flight of the C-5 will be in June, with the plane operational and ready for delivery a year later. Meanwhile, the C-5's highly sophisticated Nortronics-built systems will be flight tested this summer aboard a C-141, simulating conditions the equipment will face aboard the Galaxy. The guidance system will enable C-5 crews to navigate with an accuracy heretofore not attainable. A unique Floated Inertial Platform (FLIP), a concept developed by Nortronics is the heart of the jumbo aircraft's guidance system. In addition, miniature gyros weighing less than 10 ounces are produced for FLIP by Nortronics' Precision Products Department.

Perhaps one of the most unique subsystems on the C-5 is Lockheed's MADAR, or Malfunction Detection Analysis and Recording Subsystem. It enables the flight engineer to determine, in flight, the condition of many aircraft subsystems and to identify failed components. MADAR can check more than 800 test points, thereby substantially reducing maintenance checkout time on the ground. The key item of this subsystem, the central digital computer, is being supplied by Nortronics.

The first 16 operational airplanes will be delivered by December 1969. Two additional production runs of 57 and 85 planes can be ordered on option by the Air Force thereafter.

The long-awaited rollout brings closer that day when the United States can dispatch military troops together with their heavy equipment to meet emergencies anywhere in the world.

The Military Airlift Command, however, envisions the C-5 as operating in tandem with the C-141's, using the Galaxy for equipment delivery, and the Starlifter for troop transport.

Such use of the Lockheed giant and its predecessor will, according to General Howell M. Estes, jr., commander of the Military Airlift Command, "provide the United States with a strategic deployment capability second to none in the world."

Statistics pertaining to the C-5 are overwhelming when compared to those of any existing aircraft. Its interior cargo hold could swallow the entire fuselage of a B-36 bomber or 100 Volkswagens; its T-tail stands 65 feet off the ground, making it as high as a six-story building; and from tip to tip the wings span 223 feet.

Airborne Omega Contract Received From U.S. Navy

The Navy Air Systems Command has awarded Northrop Nortronics an important new contract for navigation equipment.

The latest contract, announced last week in Washington by Representative Charles H. Wilson of Los Angeles, is for $1,024,240 for the design and development of two engineering models of the airborne Omega automatic receivers.

These combined computer-receiver units will be the first automatic Omega receivers for both high and low speed aircraft and will be built by Nortronics' Navigation department at Hawthorne.

"This award is a further investment in our department by the Navy for the worldwide Omega system," stated Ross Miller, vice president and manager of the Nortronics Navigation department. "We have already been established as the leader in ships' Omega receivers. We will also introduce to the Navy, as a part of this program, the latest computer in Nortronics' family of lightweight general purpose machines, the NDC-1070."

The Navigation department already is at work on a production quantity of Omega receivers for shipboard use under a contract awarded last year. The computer for the airborne Omega system is similar to those being produced for the C-5 aircraft inertial-Doppler system.

Manufacture of Omega systems is expected to extend over a period of 10 years.

Significantly, Congressman Wilson, in announcing the latest Omega contract award, stated, "Commercial and international sales of this Omega system could range from $300 million to $500 million."

Corporation's Earnings Rise 21 Per Cent

Northrop Corporation recorded a 21 per cent increase in earnings for the six months ended January 31, President Thomas V. Jones reported last week.

First half earnings were $6,542,000, compared with $5,395,000 for the first six months of last year. Per share earnings for the period were $1.39 on an average of 4,520,000 shares outstanding, compared with $1.27 per share on an average of 4,215,520 shares outstanding a year ago.

Sales in the first half were $231,804,000, up 9 per cent from the $213,244,000 in sales recorded for the same period last year.

Backlog on January 31 was $722,407,000, compared with $569,000,000 a year ago.

BRONZE SCULPTURE

Art Group Says 'Thanks'

Nortronics has been honored by the Palos Verdes Community Arts Association "for contributing to the enrichment of culture in the Palos Verdes community."

These words of appreciation were expressed by representatives of the group who presented a specially commissioned bronze sculpture to the Northrop facility. Frederick Stevens, vice president and Nortronics general manager, received the original art piece—depicting man as encompassed by his world—on behalf of Nortronics.

The presentation was made by a committee of Community Arts officers headed by Mrs. H. Lawrence Bayer, president of the association.

Nortronics' specific contribution to the Palos Verdes artists for the past two years has been the granting of the use of its hilltop grounds as an outdoor setting for the PVCAA's fall Design and Crafts Show.

The annual exhibit is to promote the association's "Art For Fun(d)s Sake," which is intended "to enrich the community's appreciation of fine arts and crafts, and to involve the entire family in art through creative activities."

Last fall 10,000 persons attended the event.

The bronze-cast sculpture was created by Professor Ken Glenn, head of the Sculpture Department at Long Beach State College, especially for the presentation to Nortronics.

ARTISTS' APPRECIATION—Representatives of the Palos Verdes Community Arts Association meet with Frederick Stevens, vice president and Nortronics general manager, to present Nortronics with a specially commissioned bronze sculpture in appreciation of the use of the Palos Verdes grounds for the artists' annual exhibit. The ladies are (from left) Mrs. Allan MacAller, Mrs. Robert Coors and Mrs. H. Lawrence Bayer, president of the Association.

Executives Complete Management Course

Three months of concentrated study by 14 Northrop executives —who volunteered for an advanced management development course — has concluded with praise from Northrop President Thomas V. Jones for the participants' "extraordinary effort and sacrifice."

The principal speaker at graduation ceremonies, Mr. Jones emphasized the "critical importance in management of taking advantage of change."

"Management must be able at all times to recognize change, to adapt to change, and to take advantage of the opportunities it brings. More than that, in our business we constantly initiate change," he said.

The advanced management course, administered by the Northrop Management Development office, emphasized the interactions of economic, political and social forces on business and, subsequently, the work of a contemporary professional business manager.

All of the graduates, who represented the Corporate offices and Nortronics and Ventura Divisions, were of a single voice when it came to evaluating the course.

"It was an outstanding experience," according to Welko Gasich, vice president and general manager of Ventura Division. "The course makes you aware of the socio-politico-economic forces of the business manager."

Jim Willson, Northrop vice president-Finance, said the studies helped "broaden my understanding of the interrelationship between the various institutions under the free enterprise system and changes in their relative importance, as well as improving my management concepts, such as differentiating between integration and coordination."

Those completing the course, in addition to Mr. Willson and Mr. Gasich, were: Larry Carroll, Ben Collins, Rex Fairless, Tom Flannigan, John Flores, M. A. Maurer, H. E. Riggins, Walt Sternadel, Wes Steyer, and Bob Young, all of the Ventura Division; Don Lewis of Nortronics; and Tom McDougall of Northrop International.

MANAGEMENT DEVELOPMENT—Northrop President Thomas V. Jones (left) congratulates John Flores, chief engineer at Northrop Ventura, during ceremonies honoring graduates of Advanced Management Development course. Mr. Flores was one of 14 top level managers completing the three months of concentrated studies.

Employee's Son Receives Bronze Star

The son of a 14-year Northrop employee has been decorated with the Bronze Star while in action in Vietnam.

Spec. 4 Baker

Jerry Lee Baker, a U.S. Army Spec. 4 and son of Carl Turner, a Norair laboratory technician, also has received two Purple Heart medals for wounds received in combat last August and September.

He was awarded the Bronze Star "in connection with ground operations against a hostile force in the Republic of Vietnam."

"His devotion to duty," a certificate accompanying the medal said, "his loyalty and meticulous attention to detail are in keeping with the finest traditions of the U.S. Army, and reflect great credit upon himself, his unit, the 25th Infantry Division and the military service."

Spec. 4 Baker graduated from Lakewood High School in 1966 and entered the Army in July of that year. He arrived in Vietnam in January 1967.

Travel Clubs Plan Las Vegas Weekend

Reservations are now being accepted throughout Northrop facilities for the April 26-28 "Las Vegas Weekend" sponsored by combined NRC Travel Clubs. They may be made through Personnel Activities.

The cost is $37.50 per person and includes roundtrip bus transportation and two nights at the Hacienda Hotel.

NRC Schedules Disneyland Night For May 25

Here's the date — Saturday, May 25—for Northrop Recreation Clubs' annual entertainment "buy of the year," Northrop Night at Disneyland.

All of the features of this fabulous funland are reserved just for Northrop families from 8 p.m. to 1 a.m. The price, including admission, is only $3.75 per person.

Tickets are now on sale at regular Personnel Activities outlets.

NRC Gets Ice Show Seats

Northrop Recreation Clubs have reserved 1,000 seats, the "best in the house," for the 5 p.m. May 5 performance of Ice Capades of 1968 at the Los Angeles Sports Arena.

Regular $5 reserved seats will be sold to Northrop employees for $3.50 each beginning March 20 at all ticket outlets.

Four To Take Part in AIAA Flight Test, Support Meet

Four Northrop men will participate this month in the American Institute of Aeronautics and Astronautics' second annual Flight Test, Simulation and Support Conference.

The meeting will be held March 25 through 27 at the International Hotel in Los Angeles.

Stan Racisz of Norair's Research Laboratories is administrative chairman for the conference, and Walter Watson of Research Laboratories Design is facilities chairman.

Richard Hachten, manager of Public Relations at Norair, is public relations chairman, and Herbert Cooles, a Norair engineering specialist, is co-chairman of a March 26 seminar on manned and unmanned space systems.

* * *

T.W. Knacke of Northrop Ventura was a participant last week in another AIAA-sponsored event, the Technology for Manned Planetary Missions Meeting.

The three-day conference took place at the Fontainebleau Motor Hotel in New Orleans.

Mr. Knacke was a panelist in a March 4 discussion on entry and landing mission requirements.

* * *

Dr. Y.P. Gupta, director of the Materials Sciences Laboratory of the Northrop Corporate Laboratories, was a colloquium speaker in Thousand Oaks last week.

Dr. Gupta discussed "Impurity Diffusion in Liquid Metals," speaking at the Aerospace and Systems Group Science Center of North American Rockwell.

* * *

The Southwest Section of the American Vacuum Society has scheduled three meetings for the next two months. Group members will meet at 6 p.m. March 20 in the Cockatoo Restaurant in Hawthorne. Research scientist Karel Urbanek will discuss "Recent Development in Achieving and Measuring Very Low Pressures."

Group members will meet on April 17, also at the Cockatoo Restaurant, to hear Richard Riegert, president of Sloan Instruments, discuss "Reasons and Methods for the Control of Vacuum-Deposited Thin Films." Reservations may be made for either meeting by calling (213) 865-0157 or (714) 776-2810.

The group's annual Symposium and Equipment Show has been scheduled for May 1 through 3 at the Grand Hotel in Anaheim.

Howard H. Haglund, manager of the Surveyor Program for Jet Propulsion Laboratories, will be guest speaker at a May 2 banquet.

Employees Return From Japanese Good Will Trip

Two ladies from Nortronics have returned from a trip to Japan, where they were good will ambassadors for a day to the City of Ichikawa.

Sophia Adams and Martha Smyers, electronic assemblers at Nortronics Hawthorne, represented the City of Gardena on a sister city tour of Ichikawa. They visited the city also on behalf of the Gardena Valley Artists' Association.

"One of the highlights of our day," said Mrs. Adams, "was a ride in the chauffeured mayor's car along with the mayor to the city hall for a lovely tea ceremony." Earlier in the day the ladies had visited the First Ichikawa School, exchanged gifts with ladies of the Japanese PTA at the school, been treated to tea and an art show, and generally received as royalty.

"We thought we were just going to stop by for an hour or so and say 'hello,'" recalled Mrs. Smyers, "but it turned into an all day event, and we'll never forget it—especially the authentic dinner at the Japanese tea house."

GARDENA GOES TO ICHIKAWA as Martha Smyers (center) and Sophia Adams visit a flower arranging class in that Japanese city with their interpreter, Hiroshi Araoka. The ladies, both electronics assemblers at Nortronics Hawthorne, spent the day as good will ambassadors as part of the Gardena-Ichikawa Sister City Program. They also toured on behalf of the Gardena Valley Artists' Association.

'Sixpence' Tickets on Sale

Discount tickets are still available at Northrop outlets for the 5 p.m. April 13 showing of the motion picture musical "Half a Sixpence" at Grauman's Chinese Theater, Hollywood.

Regular $3 reserved orchestra seats are available for $2.40.

Northrop's 'Nor Flor' To Provide Bonded Panels for Boeing 747

Northrop Architectural Systems (NAS) early this month made initial deliveries of a unique new type of floor it is manufacturing for the giant new Boeing 747 jetliner.

Highly durable and resilient, the 0.4-inch-thick flooring is fabricated in sandwich fashion with titanium or aluminum sheets bonded top and bottom to a fire-resistant polyvinyl chloride foam core.

It is delivered to Boeing ready to install as fully interchangeable planks or panels in various shapes, ranging in size from less than three to more than 40 square feet each.

Northrop calls the material Nor Flor.

Approximately two-thirds of the panels are titanium-covered. They are used in high wear areas—aisles, galleys, restrooms —of the 747. Aluminum panels cover low wear areas such as those under passenger seats. Both offer attractive weight reduction over conventional metal-covered balsa wood now used for most commercial aircraft flooring.

NAS is fabricating 204 panels to comprise 2,127 square feet of floor in each 747. Nor Flor will be used in passenger and baggage compartments of sections 42 and 46 and the 747 stateroom.

D. B. McFarland, NAS president, selected Loyal Massey to head the Nor Flor production team. Mr. Massey assigned key responsibilities to: Bill Rideout, Quality Control; Howard Cornelius, Manufacturing Control and Materiel; and Oscar Crague, Production Operations.

A 50,000-square-foot NAS facility in Long Beach has been set up and equipped exclusively for Nor Flor production. Concurrent with initial production, NAS is working to further automate its operations.

Tools required for setting up saws, drilling holes or making cutouts are made with numerical control tapes to insure dimensional campatibilities.

Northrop Norair's Engineering organization provided initial panel design, while Manufacturing Research and Development assisted in developing tools and processes for working with and bonding the materials combinations.

Metals arrive at NAS in sheets or coils, the foam core in sheets. Titanium used is .010 and .005 inches thick, aluminum .016 and .010 inches thick on top and bottom surfaces, respectively.

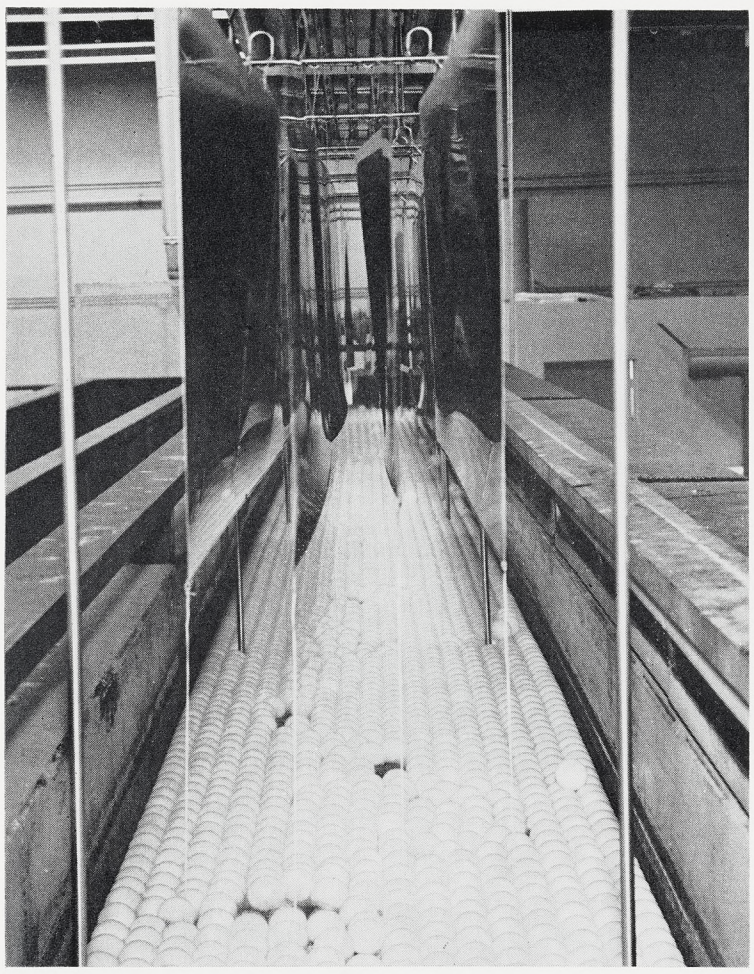
By comparison, bond paper is .004 inches thick.

Metal and core are prefit before the metal is cleaned and processed in 10 special tanks, each 33 feet long, two feet wide and seven feet deep.

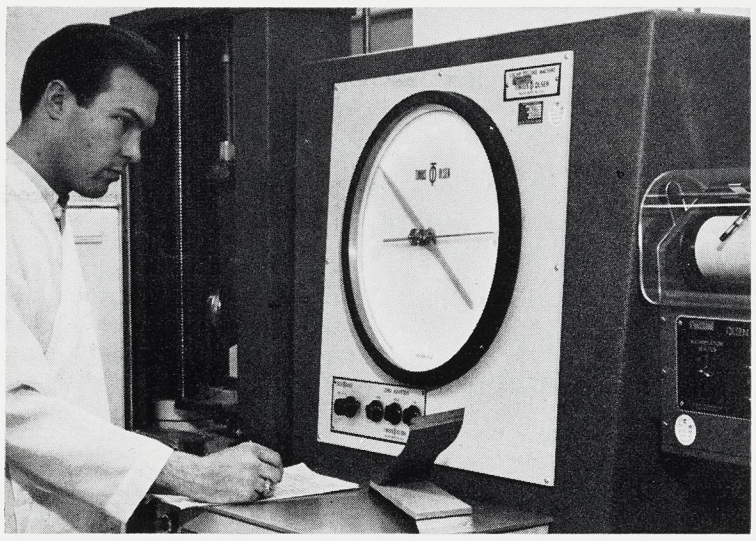
An environmental room provides "white glove" conditions for the application of adhesives, assembly and pinch-rolling the combination together.

The resulting assembly, called

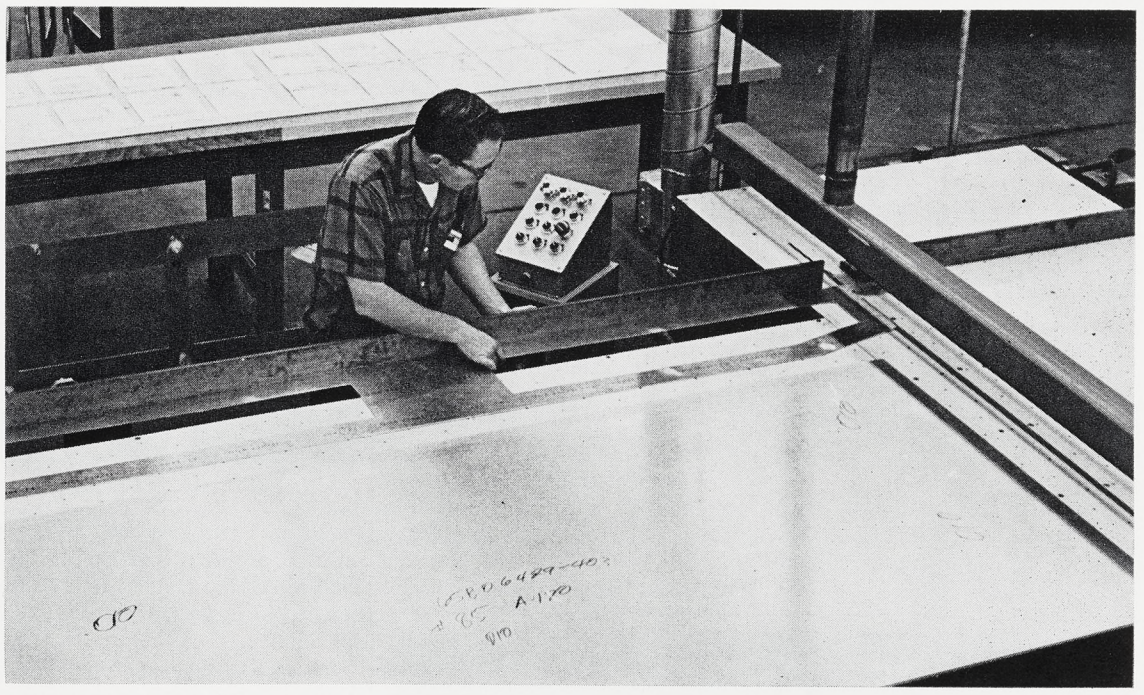
(See NOR FLOR, page 5)



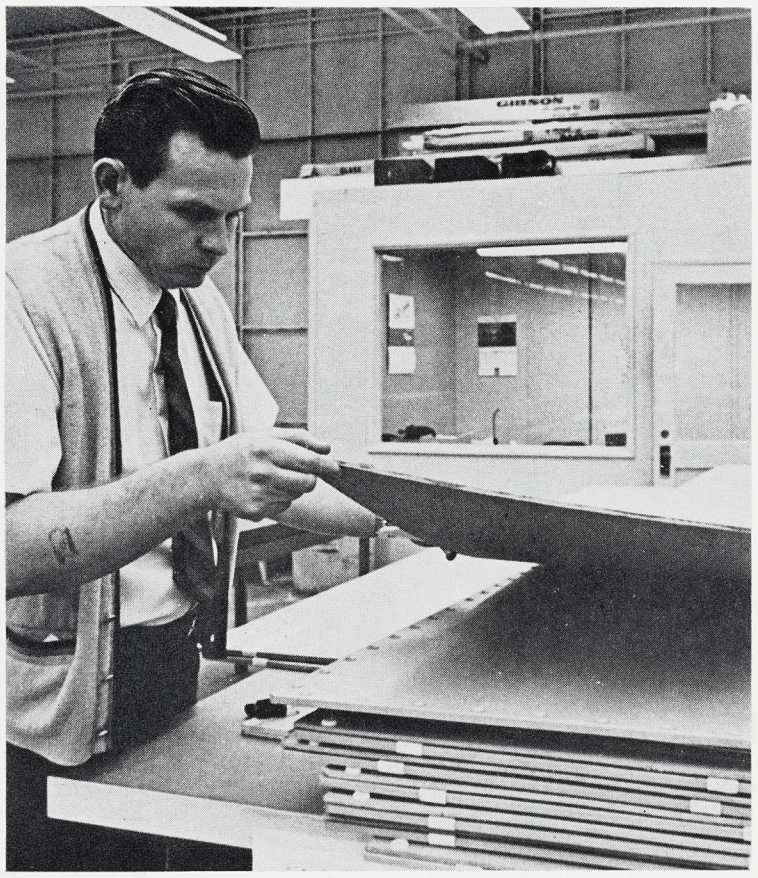
PING PONG, ANYONE?—Hollow Polyethelene spheres, 3,500 of them, provide blanket-like covering to retard evaporation of de-ionized water. Poised above tanks are titanium and aluminum sheets being processed before assembly into sandwich-like floor paneling for the 747 jetliner at Northrop Architectural Systems.



PROOFING PROCESS—Larry Baker observes progress of tensile test being applied to sample of floor material. Tests are made of each "lot" of panels cured. Sample on table surface shows thin sheet that has been stripped away from polyvinyl chloride foam core.

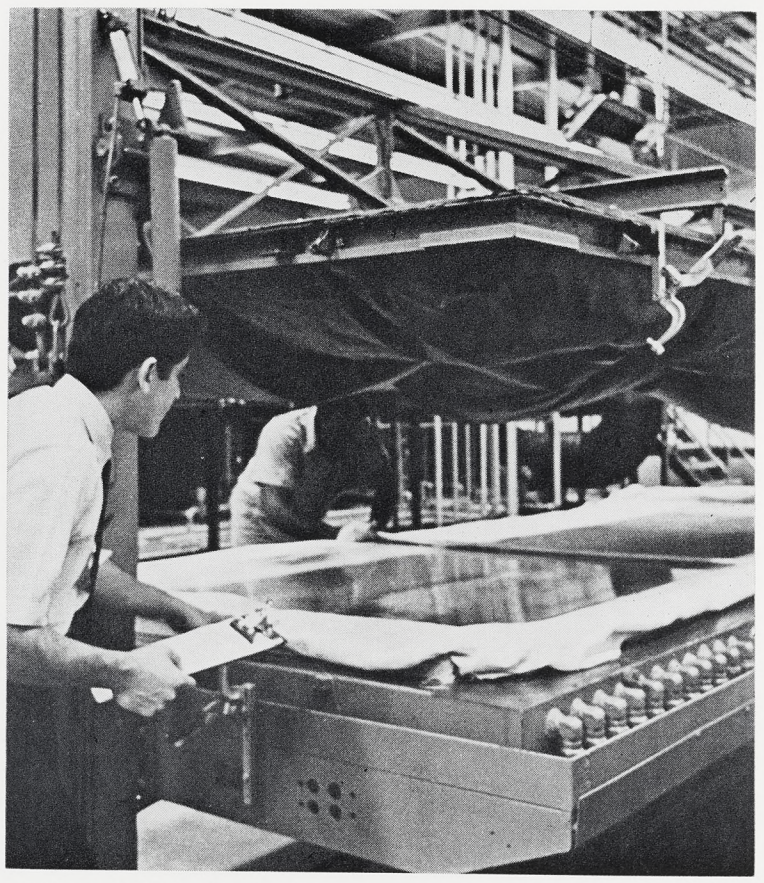


READY TO CUT — Tom Crunk adjusts unique table surface prior to cutting aluminum-covered floor panel material. Template and air cushion are part of this unit which sets, holds and cuts in one operation. Titanium-covered panels require different cutting techniques with carbon steel saw blades. Production is centered at a Long Beach facility.



PROTECTIVE FINISH—Supervisor Tom Dennis shows how fiberboard cut to exact size of finished panels is applied prior to shipping. Fiberboard remains in place during aircraft assembly, is removed when carpeting is installed, to insure unmarred surface.

TEMPLATE - TOPPED aluminum panel is drilled and countersunk in one operation by James Sparks. Drilling is a critical step.



COLD BOND STEP—Supervisor Pete Medina (left) looks on as Willie Nobles adjusts bleeder cloth around assembled floor panel material in cold bond fixture. Under vacuum, panels are cured prior to cutting, drilling and finishing. Panels may be stacked eight high for this operation.

First Aid Training Works For Norair's Gene Boggess

Over the past year more than 400 Northrop Norair employees have received in-plant instruction in mouth-to-mouth resuscitation and other first aid techniques.

One of those trainees, Gene Boggess, a research assistant in Research and Development Laboratories, has twice employed this technique to revive individuals in emergency situations.

The first occasion involved an infant girl, the surviving member of a set of premature twins, who lived next door. Mr. Boggess was summoned by an anxious mother after the youngster apparently strangled on milk. Although the youngster was rapidly turning blue from lack of air, Mr. Boggess was able to restore normal breathing. The youngster is a healthy nine-month-old today.

After serving as coordinator of the annual Centinela Valley Fine Arts Association Musical Festival, Mr. Boggess and his wife were in the parking lot when they came upon a middle-aged man who had fainted and was having difficulty breathing. Mr. Boggess again applied his knowledge to revive the victim.

Mr. Boggess' case was unusual in that he had attended two in-plant training classes on mouth-to-mouth resuscitation. One as safety representative of his department, one as an NRC Safe-T-Man.

Norair's Medical group conducts the in-plant training with Maurice Rosen, chief laboratory technician, and Dr. Richard Krebsbach, chief, Medical group, as instructors.

It has been given to all auxiliary firemen, to numerous Maintenance and Construction personnel and selected safety representatives from many organizations and functions, including facilities located off-site from Hawthorne.

Mountaineers Set Weekend Hikes

Northrop Mountaineers plan two family-type hikes for the final weekends of March, Commissioner Ken Ferrell reports.

March 23 a one-day, or half-day, hike will be made in the Sunset Peak area of Lookout Mountain near Mount Baldy Village. The first half departs at 8 a.m., the second half at 1:30 p.m. with hikers deciding to take part in one or both individually.

March 31 will be a local hike in the Orchard Camp, Sierra Madre. Mr. Ferrell may be reached at ext. 2001, Norair, for information on either hike.

QC Talk Scheduled

E. C. Bennett, Norair chief of Quality Engineering, will be the featured speaker tonight at a meeting of the American Society for Quality Control, Valley Section.

Mr. Bennett is a fellow in the society and a founding member who has held numerous local and national Society offices.

Airplane Club To Meet

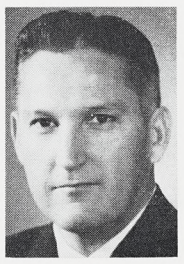
Northrop's Model Airplane Club will meet at 7:30 p.m. March 20 at NRC Clubhouse, Hawthorne, to discuss new club bylaws and flying field rules.

Additional information may be obtained by contacting Commissioner J. W. Headley on Norair ext. 2342. The club held its first contest of the year last Sunday.

VISITING JOURNALIST—Giuseppe D'Avanzo (left), one of Italy's leading aerospace editors, prepares to take his first flight in a Northrop-built F-5 with Northrop pilot Dick Thomas (center). At right is Captain Riccardo Durione of the Italian Air Force, who was interpreter. Mr. D'Avanzo visited several Northrop West Coast facilities.

Grohe, Ferguson Named To New Key Positions

L. R. Grohe, who has successfully headed the Precision Products Department of Nortronics at Norwood, Massachusetts, for the past four years, has been appointed vice president of the Military Division of the Hallicrafters Company, Northrop's Chicago-based subsidiary.



Mr. Grohe

Mr. Ferguson

Frederick Stevens, vice president and Nortronics general manager, has announced that D. N. Ferguson will succeed Mr. Grohe as vice president and manager of the Precision Products Department. The change will become effective March 18.

Mr. Ferguson, who has been with PPD for 11 years, had been deputy manager-Operations until his promotion.

Mr. Ferguson graduated from Northeastern University with a bachelor of science degree in physics in 1952.

Bridge Club Plans Weekly Tournaments

Duplicate bridge competition for regular members and newcomers is featured by the NRC Bridge Club at regular meetings held at 7:15 p.m. the first and third Fridays and the second and fourth Tuesdays at the NRC Clubhouse, Hawthorne.

Prizes and trophies are featured for games and tournaments and refreshments are served nightly. There is no charge.

Travel Club Schedules June Caribbean Tour

Northrop Travel Club has now made firm reservations for a Caribbean Holiday group tour to depart June 8 and return June 23.

This 16-day excursion will include stops at New Orleans and Miami, the Bahamas, Puerto Rico, the Virgin Islands and several points in Jamaica.

The tour cost is $666 per person and includes jet flights, air conditioned hotel accommodations, plus an assortment of other features, including an average of two meals per day throughout the tour.

An initial organizational meeting is now set for 8 p.m. Friday in Room 4, Hawthorne Municipal Airport Building just north of the NRC Clubhouse in Hawthorne. Representatives of the tour agency will be on hand and a film of the area to be visited will be shown.

Tour brochures will be available at Personnel Activities outlets within a few days.

NRC Slot Car Club To Hold 'Grand Prix'

The NRC Model Slot Car Racing Club will stage a gala "Grand Prix" race for 1/24th scale cars at 5 p.m. March 23 at the Revell Raceways, 6840 La Tijera Blvd., Los Angeles.

No advance registration is required.

Ribbons, trophies and special prizes will be presented. Car owners may contact NRC Commissioner Brian Lauffer at ext. 1060, Norair, to obtain cards good for one-half hour of free practice time prior to the event.

Events scheduled include time trials, consolation races, semi-final and main events.

Gem Trip Planned

Northrop Gem and Mineral Club plans a field trip March 16-17 to the Last Chance Canyon area near Red Rock Canyon.

Camp will be established in an area normally accessible to conventional vehicles.

Club officials said many types of minerals in the area are desirable for collectors. Among them are petrified wood, agate, jasper, opal and placer gold.

SAFETY REMINDER — Norair's Maintenance and Construction personnel are constantly reminded of safety items available for their use as they pass this display in a main thoroughfare. Supervisors give brief lectures weekly, selecting a new piece of equipment to discuss, including its use, application and protection.

BRIEFING AT NORAIR — The commander-in-chief of the Chinese Air Force, General Lai, Ming-t'ang, accepts a model of the Northrop F-5 tactical fighter from F. W. Lloyd, vice president and Norair general manager. General Lai and party visited Norair for briefings and tour of Palmdale Facility as part of a nationwide tour.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

For Sale

T-Bird, 1960, under 10,000 miles on reblt. eng., p/s, p/b, $550. 377-5853. A

Pups, ¾ German shepherd, ¼ huskie, $20 female; $25 male. 547-1047, 375-9397. A

Chevrolet, 1964 Impala, p/s, auto. trans., new tires, $1,400. 679-2456. A

Cadillac, 1961 deVille, full power, 55,000 miles, new w/s/w tires, $1,195. 674-0852. A

Chevelle, 1965 Malibu 2-dr. h/top, V-8, auto., p/s, $1,450. 714-539-2518. A

Mini-Bike, 8 h.p., lights, horn, dual tanks, racing seat, $158.50. 393-5649. A

Watch, ladies' Hamilton, $195. 675-7971. A

Soda Fountain or bar, soda water & 3 containers for mix, $150. 421-3818. A

Chevrolet, 1958 Impala 2-dr., 348 cu. in., auto. trans, r/h, p/b, p/s, p/w, $275. 676-9736. A

Volkswagen, 1962 convt., reblt. eng., new brakes, clutch & 4 tires, solid state radio, $900. 478-7100. A

Platform Rocker, maple, green frieze, $20. 676-5929. A

Sunbeam Tiger, 1965, V-8, 4-spd., $1,995. 672-1683. A

Boat, 14′, fiberglass, 30 h.p. Evinrude motor & tilt trailer, many extras, $450. 371-5193. A

Lots, 12, lake view, west end of Lake Isabella, small dn., $1,650 & $2,200. 373-1932.

Typewriter, Royal portable w/full size features, inc. carrying case, $50. 374-0178. A

Mustang, 1966 h/top, 8-cyl., Cruise-O-Matic, r/h, p/s, console, $1,900. 324-7984. A

Ski Boat, 14′ w/283 Chev. eng. & trailer, $600. 677-5240. A

Falcon, 1960 Ranchero, 6-cyl., stick, $275. 674-8534. A

Fishing Boat, 10′, wood & fiberglass, $65. 327-4585. A

Stove, gas, apt. size, 4-burners & glass in oven door, $20. 645-1520. A

Boat, 14′ Glasspar w/new 40 h.p. Johnson, elec. start, trailer & spare tire, $975. 714-847-0648. A

Tires, Allstate Radial, 7.75x14, 4, 1,000 miles on them, $120. 675-0860. A

Razor, Sunbeam Shavemaster, elec., late model, $14. 378-5175. A

Precision Tools, machinist's, mics, Verniers, gauges, calipers, drafting instruments, 1 oak tool box & 1 steel, $250. 631-3627. A

Freezer, 5′, 5-shelf, $45. 326-7305. A

Mercury, 1966 Monterey, 2-dr. h/top, p/s, Mercomatic, r/h, $2,195. 325-0801. A

Projector, 8mm Keystone, K109, $30. 675-1378. A

Mercury, 1957, 4-dr., r/h, $150. 679-7840. A

Hot Plate, 2-burner, w/adjustable heat control, $6. 826-3061. A

Sectional, 3-pc., black, $75. 327-5747. A

Trailer, at Mammoth Mtn., 33′, completely furn., $495. 545-6114. A

Silverware, sterling flatware, service for 8, 51 pcs., provincial pattern, Towle mfr. about 1900, $150. Box 501. A

Hearse Chassis, 1954 Packard, 175″ whl. base, newly reblt. Lincoln eng., p/s, p/b, many extras, $850. 676-3095. A

House, in Palmdale, 5-bdrm., fam. rm., 1¾ baths, lge. kitchen, dble. gar., 2 patios, fenced back yd., 4½% G.I. loan, $3,000 dn., or consider land for equity, $18,500. 805-947-6754. A

Camper, 6′ Chevrolet bed, $125. 867-2549. A

Ski Pants, boy's size 10, $8. 329-3152. A

Windows, steel casement, 3 sizes, 2 of ea., $59, or sell separately. 328-1520. A

Bicycle, boy's 20″ Huffy, training wheels, $18. 714-673-0244. A

Station Wagon, 1961 Rambler Ambassador, r/h, p/s, p/b, fact. air, $425. 769-3345. A

Sectional, 3-pc., sandalwood, 2 yrs. old, $100. 805-647-3447. A

Hi-Fi set, Jensen 3-way speakers, Heathkit amplifier, Eico FM tuner, Bogen turntable, $60. 714-892-5801. A

Motorcycle, Honda 150, $250. 325-3724. A

Lot, over ½ acre, near Lake Isabella, electricity, $2,500. 714-532-1361. A

Wig, brown, med. length, case inc., $70. 326-4710. A

Porsche, 1959 convt., radials, $1,450. 377-8731. A

Racing Slicks, 6 Goodyear Blue Streak, 11:00x 16, $30 ea. 676-2162, 679-7230. A

Acreage, 2½-acre, farmland near Lancaster, $1,500 dn., $50 mo. inc. 6% interest, $5,500. 375-7130. A

Buick, 1966 Riviera, p/s, p/b, p/w, air cond., stereo tape, delux radio w/vibrasonic, auto. trans., $3,330. 773-4013. A

For Sale

Washer, Kenmore auto., 3-cycle, top load, $25. 679-0980. A

Oldsmobile, 1961 2-dr. h/top, p/s, p/b, new tires, reblt. auto. trans., $375. 679-2041. A

Surfboard, Bing, 9′4″ custom, $60. 675-2331. A

Station Wagon, 1955 Chevrolet Nomad, reblt. eng., new tires, chrome whls., $550. 675-5001. A

Ford, 1938 w/'62 Chev. eng., 283 4-barrel, solid lifters, cam, 3-spd. Ford trans., $300. 328-2287, 370-0039. A

House, 3-bdrm., 1¾ baths, cpts., dps., alum. siding, corner lot, new paint in & out, $16,000. 805-942-4217. A

Building Lot, view o/looking Lake Elizabeth, on paved street, elec. & water, 10% dn., $4,150. 947-8389. A

Condominium Apt., 2-bdrm., den, gar., pool & rec. room, $35,950. 377-7460. A

Radio & Electronic Equipment, $350. 676-2076. A

Piano, ebony, baby grand w/bench, $550. 597-1519. A

Cutlass, 1963 F-85 coupe, r/h, good tires, auto. trans., $1,100. 671-7912. A

Movie Camera, Anscomatic ST/87 super 8, $40. 370-5148. A

English Ford, 1959, new battery & tires, $275. 379-0038. A

Nash, 1929 coupe w/rumble seat, $350. 353-2696. A

Range, Maytag, gas, $40. 329-7447. A

Lens, 135mm f:3.5 auto. Schneider for Exakta, $45. 835-3869. A

Range, gas, 42″, dble. oven, broiler, & storage drwr., $20. 379-7342. A

Rifle, model 99, 300 Savage w/6-power scope, $65. 635-6134. A

Wig, R&M, brown, $40. 714-828-6719. A

Exercise Machine, Ramar, 2-spd. used 5 hours, $125. 323-3796. A

Wardrobe, toddler, girl's, 5 dresses, 5 capri sets, coat & bonnet, $10. 323-4257. A

Yamaha, 1963 50 cc, $125. 323-9598. A

Pool Table, 4′x8′, $90. 371-8929. A

Bed, twin size & box springs, maple finish, $10. 756-9697. A

Organ, Estey, elec. chord symphonette, 24 chords, 37 keys, bench, $75. 377-8382. A

Chevrolet, 1964 super sports convt., air cond., p/s, p/windows, 4-spd., 327 eng., $1,350. 373-3669. A

House, 2-bdrm., fam. rm., fireplace, 5 min. to Norair, partially furn., $26,000. 675-0521.

Boat, 2 8′ racing hydrocarts, fiberglass, redesigned for use w/outboard motors, $75 ea. or both for $125. 714-839-5730. A

Surfboard, Rick, 9′5″, $55. 327-2598. A

House, 3-bdrm., 2 baths, cpts., dps., fireplace, block wall fence, f/a heating, 12 min. to Northrop Haw., $26,500. 835-5377. A

Mobile Home, Universal, 1964, 10x55, dble. expando, 1-bdrm., cpts., porches, awning, unfurn., in adult park w/recreational facilities, $4,995. 714-638-1296. A

Accessories for 1954 Mercury Monterey, seats, window frames, glove comp. door, other items, all for $20. Box 502. A

Shelby, 1967 G.T. 500, p/s, p/b, auto. trans., 8,500 miles, 428 c.i. LeMans eng., $4,300. 675-1365. A

Boat, 14′ Javlyn, 70 h.p. Mercury, $895. 644-4236. A

Machinists' Tools, Starrett, Kennedy 7-drawer chest, $250. 866-2079. A

Pups, collie, AKC, superb champion background, terms, $55 to $150. 374-6727. A

Boat, 16′ runabout w/75 h.p. Scott o/board & trailer, $1,200. 677-6498. A

House, 3-bdrm., dble. detached gar., 14′x20′ rumpus rm. w/fireplace, 70′x126′ corner lot, block wall fence, $23,500. 324-5422. A

Playpen, wood, w/teething rails, & car bed/seat, $12. 635-9370. A

Pontiac, 1965 Grand Prix, 21,000 miles, new puncture proof tires, $2,000. 675-8411. A

Buick, 1965 Riviera, all power, air cond., new wide oval tires, $2,450. 714-828-6719. A

Washer, Norge, 3½ yrs. old, needs some work, $25. 377-2064. A

Steering Wheel, for 1968 VW, black, $10. Box 503. A

Transmission for 1936 Cadillac, Series 60, $10. Box 504. A

Pontiac, 1963 Catalina convt., p/s, p/b, r/h, auto., good tires, 31,600 miles, $895. 472-2722. A

Buick, 1963 Skylark, r/h, p/s, $1,150. 830-6163. A

Golf Bag, round, black vinyl, $10. 541-1913. A

House, 4-bdrm., 3 baths, tri-level, lge. rumpus room w/wet bar, 4½ yrs. old, fully air-conditioned, 15 min. from Nortronics Palos Verdes, $45,000. 831-0480. A

Tent Camper & Boat, foldout-type, w/butane tank, stove, tables, rowboat w/oars, 13′ modified sailboat hull, $525. 371-5072. A

Dinette Set, Duncan Phyfe, 5 chairs, table & buffet, $50. 644-2759. A

Chevrolet, 1963 Impala, chrome rims, gauges, custom extras, $1,350. 671-2457. A

House, 3-bdrm., 2 baths, cpts. & dps., h/wood floors, bltins, dble. gar., fenced yard, $33,000. 322-0678. A

Acreage, 2½ acres in Antelope Valley between Rosamond & Mojave, level, on good road, $35 down & $35 mo. incl. 4% interest, $3,500. 378-1026. A

Honda 50, 1964, C100, $100. 378-4676. A

For Sale

T-Bird, 1959, full power, air cond., $525. 672-8060. A

Rifle, Marlin 22 mag., short throw lever action, 24″ microgroove barrel, $40. 676-0938. A

Honda, 1966 S-90, extras, $200. 714-539-9771. A

Simca, 1957 2-dr. h/top, $75. 422-8835. A

Washing Machine, Bendix, new rubber tub, $20. 324-7059. A

Player Piano, upright, elec. & pump, 31 rolls, recently reblt., resume $25 mo. pymts., $675. 714-635-2784. A

Pups, Doberman Pinscher, AKC, 4 mos. old, ears cropped, $150. 633-7930. A

Golf Clubs, men's Spaulding Executive, 1968, alum. shafts, D-3, std. length, used twice, irons 2-9, 4 woods, $225. 328-3028. A

TV, Zenith console w/remote control, walnut cabinet, 21″, b&w, $150. 651-0445. A

Rifle, .22 Winchester, Model 77 semi-automatic w/Weaver 4x scope, incl. 2 add'l clips, $65. 596-0521. A

Slip Lot, Salton Sea, lot for house & sep. boat dock on channel, roads & utilities in, Riviera Keys, near yacht club, $7,100. 714-535-1694. A

Acreage, 10 acres, Saugus area, view, bulldozed sites, release clauses, off Hwy. 14, terms & prepaid interest, $11,500. 654-1242. A

Go Kart, West Bend 550, racing slicks & muffler, $100. 645-3381. A

Acreage, 9/10-acre view lot, Lake L.A., terms, $9,000. 672-4450. A

Compressor, large, heavy-duty, $250. 865-5084. A

Table Top, travertine, 1″ thick, 51½″ long x 19″ wide, $10. 347-0298. A

Boat, 16½′ inboard, Chris-Craft type, mahogany deck, wood w/fiberglass hull, 1948 flathead Mercury & trailer, $1,000. 329-3217. A

Dishwasher, portable, G.E. Mobile Maid, 4 yrs. old, $85. 545-3941. A

Camera, Fairchild cinephonic & projector inc. microphone, headset, 13 mm f1.3 lens, 8 mm zoom lens, carrying case, other extras, $250. 714-528-7636. A

Pups, lhasa apso, male, AKC, $150-$200. 933-3051. A

Piano, baby grand, Emerson, mahogany finish, $590. 375-8778. A

Refrigerator for camper, butane, makes ice cubes, 22″ deep, 20″ wide, 26½″ high, $75. 379-3487. A

Pickup, 1956 International, ¾-ton, w/cabover camper, 4-wheel drive, air cond., $1,200. 671-1363. A

Chevrolet, 1964 Impala Super Sport, r/h, p/s, Powerglide, $1,250. 714-828-0858. A

Chevrolet, 1964 Impala Super Sport, 2-dr., 8-cyl., AM-FM radio, stereo, $1,500. 397-7177. A

Pontiac, 1967 Firebird OHC 6 sprint, r/h, 2 new 4-ply tires, $2,650. 883-0763. A

Pickup, 1959 Chevrolet, Fleetside, custom cab, air cond., positraction, 6-ply knobbies, hitch, alum. camper, $700. 378-2965. A

Station Wagon, 1962 Ford Country Sedan, auto., r/h, new snow tires, $750. 372-8502. A

Station Wagon, 1962 Ford Country Sedan, r/h, p/s, p/b, fact. air cond., $650. 636-5481. A

Mattress & box spring, extra firm, dble. size, 20 yr. guarantee, $60. 323-8213. A

Mobile Home, 10 x 50 w/expanded 13 x 18 living rm., in Five Star Park, terms, $4,000. 375-6114. A

Camera, Topcon Super D, 35 mm single lens reflexes w/behind-the-lens metering sys., 58 mm f1.4 lens, case, extras, $200. 377-7913. A

Volkswagen, 1966 1600 squareback sedan, radio, 12,000 miles, new spare tire, $2,200. 714-535-6824. A

Corvair, 1965 2-dr. h/top, 110 h.p., take over $69.95 mo. pymts., $700. 375-7148. A

Wedding Ring Set, cost $350, $200. 376-6182. A

Ford, 1964 Custom 500, new tires, p/s, r/h, $1,275. 644-3887. A

Monza, 1961, $300. 382-5938. A

Cemetery Lots, 4 in Terrace of Faith, Rose Hills Memorial Park, $1,000. 869-6823. A

Manifold, 4-barrel intake for 283 Chev., $15. 324-8618. A

Kitchen Base Cabinets, painted, tiled, 2 pcs., approx. 60″ ea., made to fit corner, $8. 379-1049. A

House, 3-bdrm., walking distance to Northrop, $26,500. 679-9891. A

Ford, 1965 Galaxie, fact. air, p/s, Cruise-O-Matic, 27,000 mi., $1,875. 326-2713. A

Pickup, 1959 Ford w/8′ bed & split rim wheels, $725. 863-0761. A

Disc Grinder-Sander, portable, Black & Decker, heavy duty, $75. 372-4907. A

Pups, predominately Basenji, 6 wks. old, $10 ea. 322-5097. A

Porsche, 1965, 365C coupe, AM/FM radio, luggage rack, chrome whls., $3,800. 714-595-2797. A

Boat, 14′ runabout, trailer, 30 h.p. Mercury motor, $320. 671-8672. A

TV, 23″ RCA console, walnut, Danish modern, $85. 346-9471. A

Acreage, 5 acres, Squaw Valley, Fresno County, new well, $1,500 dn., $45 mo., $6,300. 526-2791. A

Camera, 35 mm Practika, f1.9 SLR, Weston meter, $45. 714-523-2495. A

For Sale

Boat, Stevens, 1960 17′ inboard w/60 Buick Electra eng. & extras, $2,250. 325-3501. A

Home, 4-bdrm., $28,000. 320-6975. A

Bus-Camper, 1966 V.W., many extras, $2,250. 324-7623. A

Shotgun, Winchester model 1400 auto., 12-ga., 2 barrels, 26″ improved cyl., 28″ full choke, ventilated rib, recoil pad, $150. 644-5626. A

Buick, 1963 Wildcat, 2-dr., auto., p/s, p/b, p/w, $1,300. 395-9728. A

MG Midget, 1964, wire wheels, heater, $950. 370-2876. A

Buick, 1954, r/h, p/s, p/b, $100. 374-5712. A

Stereo Console, Symphonic solid state, walnut finish, $140. 393-8521. A

Stereo System, 32W component, AM-FM, FM/MX, changer, 3 lge. speakers, $110. 823-1555. A

Pontiac 2 + 2, 1965, 421 cu. in. eng., p/b, p/s, 4-spd., new tires, radio & rear speaker, $2,600. 424-1869. A

Tape Recorder, Sony, model 500A, 4-track, stereo, 7½, 3¾ IPS; up to 7″ reels; auto. shutoff, other extras, $200. 989-5156. A

Wanted to Buy

Mattress, king size, firm. 670-8453. B

Weaving Equipment, for sectional warping, creel for spools, lease reed, tension box, non-elec. bobbin winder. 378-1863. B

Air Conditioner for automobile. 328-3306. B

Bicycle, male & female 27″ Schwinn 4-spd. or better. 793-3472. B

Shot Shell 12 ga. & cartridge hand-loading equipment. 322-5136. B

TV, portable, 18-21″ & vacuum cleaner, Kirby w/attachments. 325-6652. B

Adding Machine. 671-1012. B

Propane Tank, for campers, 5-gal. size & tubing. Box 505. B

Western Saddles, adult, good condition. Box 506. B

Short Block or stripped eng. for 1959 Renault Dauphine. 370-2876. B

Free (To Be Given Away)

Pups, 4, females, dukes mixture. 644-2180. D

Rentals Offered

House, 2-bdrm., furn., Inglewood area, $155 mo. 823-1910. E

House, 3-bdrm., 1½ baths, lge. gar., newly decorated, $175 mo. 679-5241. E

House, 3-bdrm., fireplace, bltins, ocean view, $235. 372-7994. E

Cabin, Green Valley Lake, $25 w/end; $45 wk. 324-0649. E

Cabin, Green Valley Lake, $35 w/end; $55 wk. 320-2002. E

Apt, 2-bdrm., furn., lge. pool & patio, closed gar., near El Camino, adults, $170. 324-8373. E

House, 3-bdrm., fenced yard, tile kitchen & bath, panel living rm., children OK, $140. 675-6301. E

Apt, 2-bdrm., furn., lge. rooms, washer, dryer, TV set, 4 short blocks to Northrop, all utilities pd., $150. 833-2512. E

Apt, 1-bdrm., near King Harbor, cpts., dps., bltins, piped music, bltin vacuum, gar. w/-storage cabinets, $115. 372-8835. E

Apt, 1-bdrm., unfurn., cpts., dps., stove, refrig., newly remodeled, gar., $250. 378-5201, 545-3656. E

House, 3-bdrm., 2 baths, Torrance area, close to schools & Del Amo Shopping Center, $225 mo. 372-9871. E

Child Care Offered

Child Care, near Crenshaw & Artesia. 324-3195. G

Child Care in my home, all ages, hr., day or weekly. 644-3817. G

Child Care in my home, infants or toddlers, fenced yard. 674-5424. G

Child Care, 1 yr. or older, but pre-school. 370-8996. G

Children, 1 or 2 yrs. or older, in my home, near Northrop. 772-3884. G

Lost

Wristwatch, Gruen, ladies', white gold, bet. dept. 5707 & Engineering Science Center, February 21, reward. 329-9464, 327-8994. J

Watch, ladies' Lady Elgin, gold w/black suede band, reward, near Johnson Bldg. trailers on Feb. 16. 371-1439. J

Personals

I deeply appreciate the thoughtfulness of my friends at Nortronics following my accident. VIC STEININGER. L

I want to express our deepest appreciation for all the expressions of sympathy upon the recent passing of my father, John A. Kasson, on behalf of all the family. GLEN F. KASSON. L

Ironing in my home by the hour or piece, reasonable. 371-3079. L

Please accept my sincere appreciation for the many cards & expressions of sympathy in the loss of my husband, Ernest C. Mitchell. ANNE MITCHELL. L

For Sale or Trade

Home, stucco, in Inglewood, 3-bdrm., den, cpts., h/wood floors, 2-car detached gar., patio, block wall fence, 2 full baths, $9,000 equity, or trade for land or home in Malibu Canyon or Thousand Oaks area. 671-8401. M

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Compton & Normandie, Gardena. Mornings only. Mary L. King, Norair, ext. 2605, 323-9390.

8 a.m. — 4:45 p.m.

White Oak & Topham, Encino. Can meet at White Oak on/off ramp or Tarzana, Encino, Reseda area. L. E. Anderson, Norair ext. 1676, 342-7565.

Kornblum & 190th St., Torrance. Jeanne M. Lindsey, Norair ext. 2264, 676-3142.

Rides Offered

7:30 a.m. — 4:15 p.m.

Thousand Oaks at Von's in Shopping Center. Chartered bus. D. W. Haddon, NCL ext. 4565 or 2961, 805-495-3498.

NOR FLOR

(Continued from page 3)

a "blanket," is stacked up to eight high for cold bonding under vacuum. Sensitive instruments keep tab on the bonding cycle to assure perfect conditions. Bond or tensile tests are made on samples from each cure lot of "blankets."

Careful measure follows the curing to assure a maximum yield of panels from each "blanket." This is much like a dressmaker working with cloth and pattern.

Cutting requires a special routine for each of the two types of metals used. Aluminum panels slide over air cushions and are positioned, held and cut in one quick operation following template contours. Titanium is held in position and moved through high carbon steel saws.

Routing removes 1/10th of an inch of core around all edges and special sealants are applied to protect the panel edges.

Drilling is an important step in that drills must penetrate the tough titanium and soft core entirely, while leaving a counterbore indention. Aluminum inserts are placed and flanged or upset in each hole. They provide a countersunk hole through which bolts are fit snugly to secure the flooring to the structure of the aircraft. Some holes are as many as five inches apart, although most average two inches in spacing.

Hand alodining, painting (aluminum only), drying and packaging follow. Each panel is fitted with a fiberboard covering identical to the shape of the panel. Held by plastic applicators, the fiberboard protects panel surfaces during aircraft assembly. They are removed for carpeting.

As many as 50 panels may be packaged in each special shipping container designed for them. Containers are routed via Norair where they are placed aboard one of the special railroad cars used to carry Norair-produced fuselage components to The Boeing Company assembly plant in Everett, Washington.

Trailer Club To Meet

The NRC Trailer and Camper Club at Nortronics Anaheim, which was dormant last season, is being re-activated.

There will be an organizational meeting at the NRC Clubhouse at 1834 Valencia Drive in Fullerton at 7 p.m. March 19 for the purpose of formulating plans for possible summer trips.

All Nortronics employees with a trailer, a camper, or a tent and an interest in group camping trips, are invited to attend.

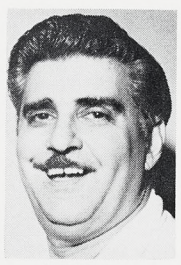
Further information is available from Betty Stage, commissioner, on Anaheim ext. 1105.

Employees' Suggestions Worth Nearly $2,000

Twenty-three Nortronics employees will receive recognition and ready cash totaling $1,994 for 30 cost saving ideas submitted to the suggestion awards program. Two individual awards total more than $300, one is above $200, and three others exceed $100.

The largest award for the month went to Lionel Rainville,

Mr. Rainville



Mr. Pappas

Mr. Martinez

Mrs. Evans

Mr. Freeman

Mrs. Gibson

Mr. Kelley

a maintenance mechanic at Anaheim's Page Court facility. Mr. Rainville won $368 for devising a new procedure for retort cleaning of heat treat furnaces which greatly reduces the number of man-hours formerly lost during shut-down.

In Anaheim's Machine Shop unit, George Pappas' new counterboring technique maintains a constant depth in the part being drilled, and brought an award of $338.

Hawthorne's top suggester was Reymundo Martinez, of the Fabrication Services unit, who developed a vacuum chuck for flat parts, and received $212 for the effort. Mrs. Byrda Evans—also of Hawthorne — garnered $144 by modifying a harness board.

A $180 award went to Lee Freeman, jr., also at Page Court, who came up with a better idea for a limit switch for the cone chucker; while Page Court's Frances Gibson and Russ Kelley are sharing the benefits of a $150 suggestion involving pusher plate shims.

Four of the 23 suggesters submitted multiple suggestions which were judged awardable. R. T. Noland, II, of Anaheim's Production group, will receive four separate checks totaling $109. Robert Collins, Henry Epperson and Al Tucker, also of Anaheim, each had multiple awards.

Nortronics' Donation A Record $90,000

Final figures are now in and a breakdown is available concerning the record $90,000 pledged to AID-United Givers by Southern California Nortronics employees in support of major health and welfare causes.

Anaheim employees recorded the largest single installation pledge of $44,000. The remaining $46,000 in AID gifts will come from Nortronics employees in Hawthorne, Palos Verdes, and other Northrop Support Operations department personnel. Both Anaheim and the latter three employee groups had an equal participation of 52.5 per cent.

Nortronics Huntsville, though having a smaller dollar contribution, received AID pledges from 94.4 per cent of its employees.

JUNIOR ACHIEVERS RECEIVE CHARTERS — In separate ceremonies, two Junior Achievement companies have been presented charters for the year. HESKO President Terry Grantham (left) accepts the charter from Ross Miller, vice president and manager of the Nortronics Navigation department, whose members counsel the South Bay-Centinela achievers. After receiving their charter for the Orange County ORCO JA group, President Rick Zavala (right) presents the company product, a tool rack, to Reuben Gibney, director of the Administration and Control section at Anaheim.

'Scent of Fashion' Set By Anaheim Women

The Nortronics Anaheim Women's Club has chosen "A Scent of Fashion" as the theme for its spring fashion show set for March 30 at the La Mirada Country Club, according to Donna Robison, Club president.

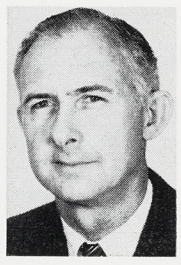
The event is scheduled for noon until 4 p.m. and will feature professional models and commentary on the new spring fashions by Florence Smales, prominent Orange County fashion coordinator. Cocktails will precede a luncheon, followed by drawings for door prizes.

Tickets are $3.75 per person and are available at the Personnel Activities office.

Ladies from other Nortronics installations are invited to attend. Special arrangements for securing tickets may be made by contacting Miss Robison on Anaheim ext. 613.

Hawthorne's Amos Adams Receives 25-Year Award

A Nortronics engineering technical assistant has completed 25 years of service, five others have reached the 20-year mark and 18 are scheduled to receive 15-year awards during March.



Mr. Adams

Amos Adams, jr., of Hawthorne's Precision Mechanical Development Laboratory, came to Northrop in 1943 to work on the Flying Wing Program. During his long tenure with the company, Mr. Adams worked on a variety of Norair programs prior to joining the Nortronics Division when it was formed in 1957.

Four of the 20-year employees are from Hawthorne. They include Preston Cox, Instruments and Controls Laboratory; Joseph Immler, vendor liaison representative in Purchasing; Macy McCarl, senior equipment records coordinator with the Systems SRA Test unit; and John Morgan of the Precision Mechanical department. Paul Halderman, Electro-Optical Tracking Systems Development unit, receives the lone 20-year pin from Palos Verdes.

Eighteen others will receive recognition of 15 years service. They are Corydon Austin, Richard Bush, Gilbert Foljambe, Anita Hulme, Audrey Jacobson, Ralph Jenkins, Ruby Masterson, William Nunnally, Gerald O'Brien, William Scott, J. D. Tuttle and Elizabeth Zelnar, all of Anaheim.

At Palos Verdes, the individual award this month for 15 years service goes to Robert Koerner. Completing the list of 15-year awardees are Tom Chapin, Donald Diem, Ronnie Pearson and Earl Simpson of Hawthorne; and R. H. Osborn, with the JPL/Edwards Test Station.

Tickets Available For Angels, Giants

A special block of 100 tickets for a California Angels and San Francisco Giants exhibition baseball game has been made available to the NRC for sale to Nortronics employees.

All tickets are terrace level seats along the third base line, selling for $3.50.

The exhibition is a single game at Anaheim Stadium scheduled for Sunday, April 7.

Tickets are available only at the Anaheim Personnel Activities office.

THE GAVEL IS PASSED from outgoing Nortronics Management Club President Tom Barry (left), TEAMS program manager, to incoming Club President Stan Pine (right), Personnel and Management Training administrator. Frederick Stevens, vice president and Nortronics general manager, was guest speaker for the annual dinner meeting.

DR. H. R. LUXENBERG

Anaheim Engineer To Teach

A Nortronics engineer will teach a 12-week course in Display Systems Engineering at the University of California at Los Angeles beginning the end of this month.

Dr. Luxenberg

Dr. H. R. Luxenberg, an Information Systems consultant with Nortronics Anaheim, will teach a course from March 28 to June 20. The class, similar to one offered in three past years, is intended for engineers and scientists concerned with aspects of specification, evaluation, or design of complex display systems.

The purpose of the course, according to Dr. Luxenberg, is to "present pertinent technologies, concepts, theoretical foundations and practical applications of contributing disciplines to information display systems."

Dr. Luxenberg is co-editor of a new book titled, "Display Systems Engineering," and has been active in the information display field since 1958.

As an Information Systems consultant with Nortronics, Dr. Luxenberg is involved in graphic arts applications as well as displays and computers. He is also executive secretary and a charter member of the Society for Information Display.

Fee for the four-unit course is $55. Classes will meet Thursdays from 7 to 10 p.m. at UCLA's Boelter Hall.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 6 | March 27, 1968

Glenn Bulman —'Our Man In Scotland'

There's a bit of the brogue—just a trace, really—in Glenn Bulman's voice as he talks of his experiences as a Nortronics field engineering representative in Scotland with the Royal Naval Ammunition Depot (RNAD) at Coulport.

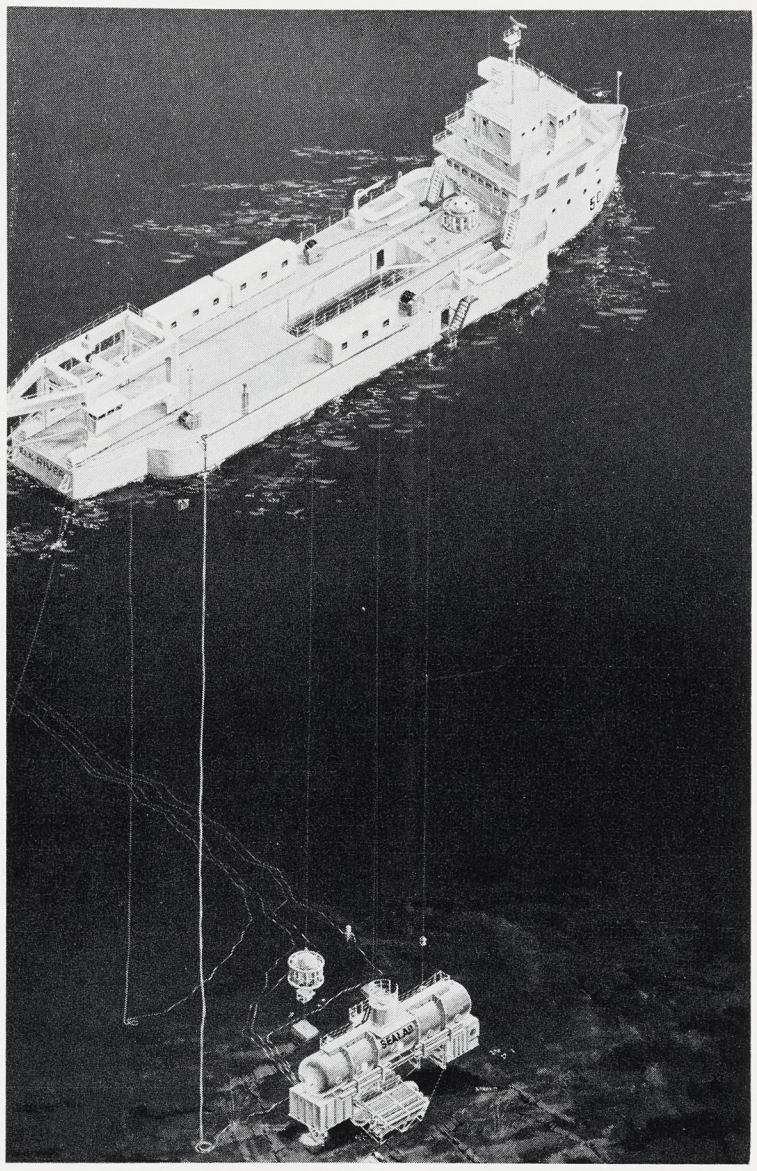
Mr. Bulman

"Coulport would remind you somewhat of Seattle," says Mr. Bulman with an inflection and accent born of nearly two years among the Scots, "because in Coulport—even more so than in Seattle—it's either raining, has just finished raining or is about to rain."

But, in the 20 months or so that Mr. Bulman and his wife, Virginia, have been in Scotland, they've enjoyed the village of Rhu where they make their home. Their two bedroom cottage sits two to three miles west of Helensburgh (pronounced "boro" if you want to sound like a native), hard by the Firth of Clyde; the river that's just a few miles from legendary Loch Lomond.

In carrying out his Nortronics assignment, Mr. Bulman, a 14-year Northrop employee, often slides into his Ford Cortina filled with 73 cents-per-gallon petrol, and motors 75 miles along the

(See SCOTLAND, page 6)



SUPPORTING SEALAB III is this modified LSMR which will supply electrical power and other necessities to aquanauts living and working in and from the habitat on the ocean floor below. The command and medical vans will sit adjacent to one another—as pictured in this artist's conception—on the starboard deck of the surface support vessel. (Official U.S. Navy photograph.)

Navy Plans Unveiling Of SEALAB Stations

Monitoring Vans To Provide Link Between Ocean Floor, Support Ship

The first integrated communications and medical monitoring stations built especially for manned underwater experiments will be unveiled at Nortronics' Anaheim facility tomorrow by the U. S. Navy. The portable stations are being developed for the Navy's experiment, SEALAB III, the most ambitious "Man-in-the-Sea" project to date.

Housed in two 26-foot vans resembling large house trailers, the monitoring stations will be the key link between SEALAB III sea floor habitat, the surface support ship, and the San Clemente Island shore support facility, when the undersea laboratory is manned by teams of aquanauts this summer off the coast of Southern California.

During the 12 or 13 days each team of eight aquanauts will be on the sea floor, one of the vans, which contains one of the most complete and compact portable medical laboratories ever assembled, will monitor the bio-medical effects of living and working at a depth of 600 feet.

The medical van also contains a monitoring system to make around-the-clock checks on the composition of the sea floor habitat's atmosphere.

The other van is the command center, which includes communications systems and an office for the on-scene commander.

Both vans were designed and built for the Navy's Deep Submergence Systems Project (DSSP) by Nortronics Anaheim.

Primary use of the medical van will be for physiological/bio-medical examinations of the aquanaut crews before and after their underwater stays. However, periodic blood and urine samples will be sent up to the van for analysis.

The command van, in addition to being the communications and command center, contains both audio and visual recording instruments and processing equipment for use in collecting and analyzing data during and after the 60-day SEALAB III experiment.

Design and construction of the vans were approached on a systems engineering basis which is expected to result in more complete and accurate analysis of the abilities of man and his equipment to work on the ocean floor. Every instrument in the vans is firmly anchored and seaworthy. The vans will be installed on the deck of a 225-foot range support ship, under cognizance of the Naval Underwater Warfare Center in Pasadena.

The vans will be manned by Navy personnel with two persons normally working in the medical van and two or three persons in the command van.

The multi-faceted DSSP was launched after the loss of the nuclear powered submarine Thresher to improve the Navy's capabilities for underwater operations. "Man-in-the-Sea" research in underwater living is but one aspect of the total program.

Nortronics is the engineering support contractor for the total DSSP effort. Included in Nortronics' responsibilities are the establishment of criteria for the design of systems and analyses of performance and missions.

MARIETTA SUPPORT TEAM

Engineers Prepare for First Flight of C-5

Now that the world's largest airplane, the U.S. Air Force's Lockheed-built C-5 Galaxy, has had its public premiere, our men in Marietta — Nortronics engineers assigned to the Lockheed-Georgia facility—are looking forward to the giant plane's first flight in June.

From an initial complement of two men under Paul Vance, supervisor of Technical Liaison at Marietta, who moved from Hawthorne to Marietta in February 1966, the Northrop resident staff of electronics and test engineers has grown to a current level of 11 engineers.

Nortronics is responsible for design, development, test and production of the C-5 navigation system.

Additional Navigation department personnel in Georgia are under Lee Finch, supervisor of System Integration Testing. They are Lead Engineers Fred Zeiss and Bill Taylor, and Resident Test Engineers Chuck Boulle, Bill Finch, Jim Pickerill, Bill Wood, Jim Stephens and Jerry Colmery.

Among our men in Marietta are Don Hansen, liaison engineer, and Ken Wiley, test engineer. They have served in these capacities at the Georgia facility almost from the inception of the C-5 Program.

This staff reports to Lloyd Balsam, Nortronics' C-5 Program manager, through N. V. "Mich" Micheletti, chief of Systems Integration.

In the early days of their assignment, our men in Marietta worked with their counterparts at Lockheed in equipment configuration definition and interface definition phases. They helped establish requirements, then formulated plans for efforts now in progress.

They coordinate their day-to-day activities with Sam Glass, Lockheed's program manager for C-5 testing and Don Babcock, group engineer responsible for C-5 guidance system development.

In Hawthorne, Mr. Balsam, Mr. Micheletti and other C-5 team members are working closely to coordinate the total effort with J. B. (Jack) McChesney, Lockheed's senior management representative in charge of administering that company's C-5 contracts with Nortronics, who maintains offices within Hawthorne's Navigation department facilities.

In addition to direct telephone lines, a direct Datafax facsimile system, capable of sending and receiving messages, drawings and blueprints, links Marietta and Hawthorne.

In late summer of 1967, as initial Nortronics hardware items began arriving, emphasis switched from equipment configuration and interface definition to the "marrying" of these component systems, and then the conducting of extensive tests to prove their compatibility.

Major systems involved are the Nortronics-produced Inertial-Doppler Navigation Equipment (IDNE), the Norden Multimode Radar (MMR), Lockheed's Station Keeping Equipment (SKE), and the Litton Radar Altimeter Equipment (RAE), in addition to numerous supporting components and extensive aerospace ground equipment, much of it provided by Nortronics.

Continuing tests at Marietta are being carried out in a comprehensive Avionics Simulator Laboratory which Lockheed built.

This special test facility makes it possible to test and re-test individual components of the guidance system as well as all components working together. It is a key phase prior to flight testing and has been in progress for several months.

Actual flight tests of avionic systems are being performed out of Marietta aboard a Lockheed C-141 Starlifter.

FROM MARIETTA TO HAWTHORNE is more than 2,000 miles as the crow flies, but Nortronics Engineers Don Hansen (left), Bill Finch (standing) and Lee Finch can communicate from Lockheed-Georgia to Nortronics C-5 officials on virtually an instantaneous basis, thanks to the use of Datafax direct phone lines and facsimile transmission equipment installed in the Nortronics trailer facility at Marietta. *Other photo on page 6.*

INTRODUCTION TO SAILING

'Sunday Sails'—Getting Their Feet Wet

Would-be sailors lacking a deck to stand on are being given an introduction to things nautical through a novel "Sunday Sails" program.

Sponsored by the Northrop Sailing Club, the program is entering its second year.

It consists of making arrangements for sail boats then providing an experienced club member to help neophyte sailors master basics of handling them.

Sessions are generally held twice each month and last three hours each. The cost is a nominal $3 per person.

Sailing is confined to the harbor at Marina del Rey, but offers an ideal opportunity to tack and turn, leave and approach a dock, to maneuver among other boats and practice other basics. More than anything else, it is a pleasant three-hour outing.

"Our aim is to provide recreation for Northrop families and to promote sailing, both cruising and racing, among owners and non-owners of boats," says NRC Commodore Jim Reeder. "Over the past year we have scheduled more than 60 people through our program. We have received many favorable comments from those taking part."

Commodore Reeder says another step, now being contemplated, is to set up ocean racing events for beginners who have mastered the basics.

The next "Sunday Sails" program will be March 31. An NRC Sailing Club meeting tonight at NRC Clubhouse, Hawthorne, will determine subsequent dates for the coming months.

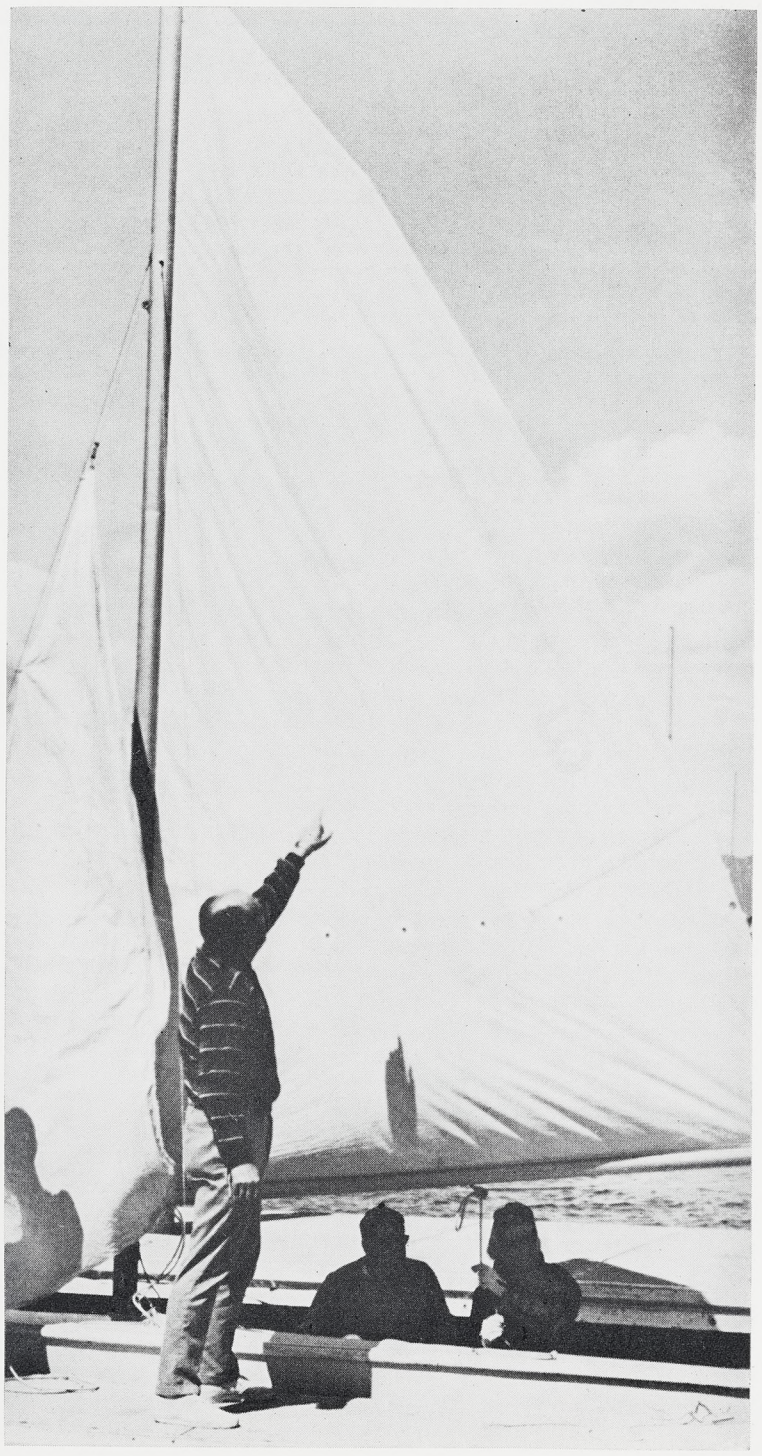
Due to the necessity for reserving boats, those interested must make arrangements and pay fees at Personnel Activities offices by 2 p.m. on the Friday preceding the "Sunday Sails." Activities are held at "44 Del Rey Marina," Mindanao Way, Marina del Rey.

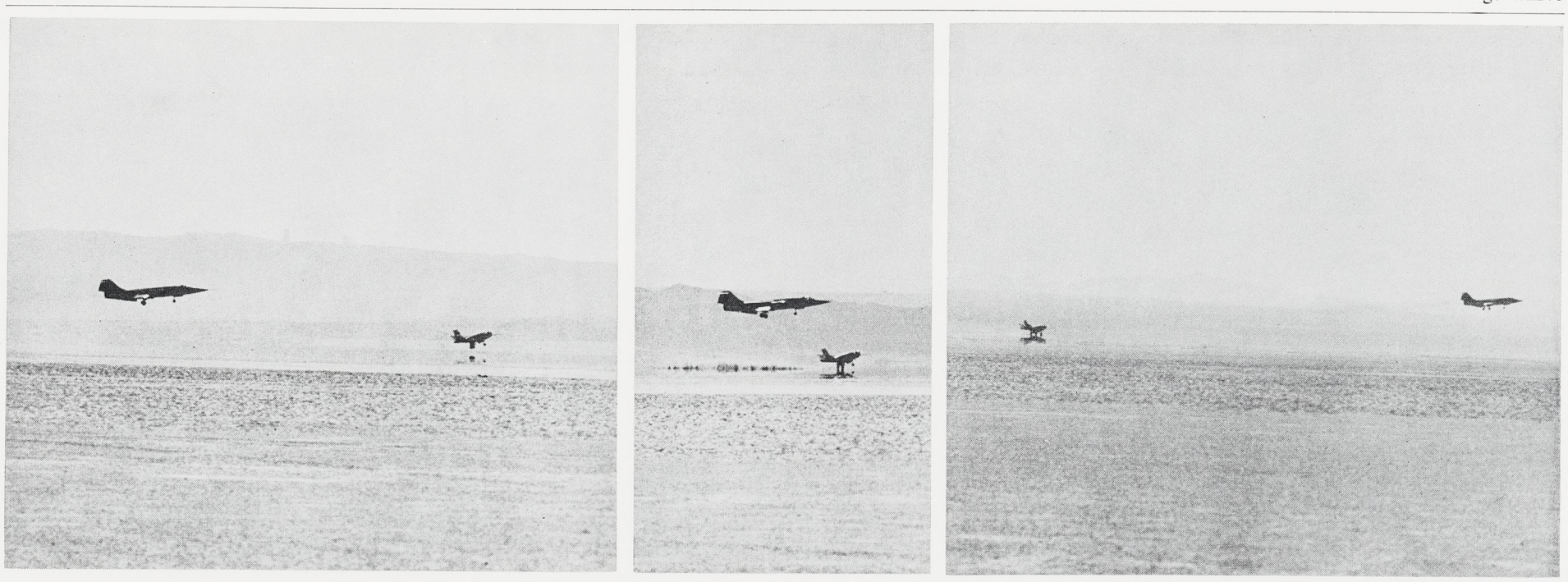
Several interesting summer events are being planned by the Sailing Club. One is a charter trip aboard a 50-foot sloop, another is a weekend cruise to Catalina Island, plus small boat racing. The 1968 aerospace trophy race between Northrop and TRW is being planned for November.

Information on the club may be obtained from Commodore Jim Reeder, ext. 573, at Nortronics Hawthorne; Phil Snow, ext. 632, Nortronics Hawthorne; or Eleanor Myers, ext. 2858, Norair.

☆ ☆ ☆

YO HO HO — Members of the Northrop Sailing Club take to the waters of Marina del Rey in their "Sunday Sails" program of training new yachtsmen. Above, members stand at the launching dock. In the photo at right, Jim Reeder of Nortronics, commodore of the group, points to a sail while checking wind conditions. Experienced sailors teach the basics of the sport to novices in the unique program. Sailing Club members are planning a weekend summer cruise to Catalina Island.





The Northrop-built HL-10 Touches Down on Rogers Dry Lake

Air Force Major Pilots Northrop-Built HL-10

The Northrop-built HL-10 lifting body was test flown successfully March 15 for the second time. Major Jerauld R. Gentry, USAF, was at the controls.

Major Gentry and the HL-10 were air-launched from a mother ship flying at 45,000 feet and 400 miles per hour. He guided the 6,000-pound wingless experimental craft through a "U" shaped pattern, then made a 220 mph glide landing on Rogers Dry Lake in the Mojave Desert.

Although a rocket engine was installed in the HL-10, it was not used in the four and one-half-minute flight.

National Aeronautics and Space Administration (NASA) is using the HL-10 as a research vehicle to gain knowledge for future design of manned re-entry vehicles.

The program is centered at NASA's Flight Research Center and the flight test program is a joint NASA-USAF effort.

Initial flight of the HL-10 was December 22, 1966.

Since that time, NASA has modified the HL-10's vertical tail fins in order to direct more airflow over the control surfaces located at the rear of the craft. Modifications consisted of canting outward the front part of the HL-10's vertical tail fins.

The March 15 flight was the first following modifications.

The HL-10, one of two lifting body crafts built by Northrop for NASA, obtains its lift for flight from the shape of its body rather than wings.

AN INTERESTING PAIR—Northrop-built HL-10 lifting body fits snugly under the wing of a B-52 mother ship as it taxies out for flight. Minutes later the B-52 air-launched the HL-10 at 45,000 feet to begin its second successful flight.

HAPPY TWOSOME—Major Jerauld Gentry, USAF, and his wife, Arden, are all smiles shortly after Major Gentry piloted the HL-10 lifting body to a successful landing following an air launch. The flight was the second for the Northrop-built wingless craft.

SHOP TALK — Major General Hugh Manson, commander of the Air Force Flight Test Center (left), discusses successful HL-10 flight.

Information Set For Travel Club Alaska Tour

Information on another Northrop Travel Club group tour planned for 1968, an air-sea-rail-bus visit to Alaska, is now available through Personnel Activities.

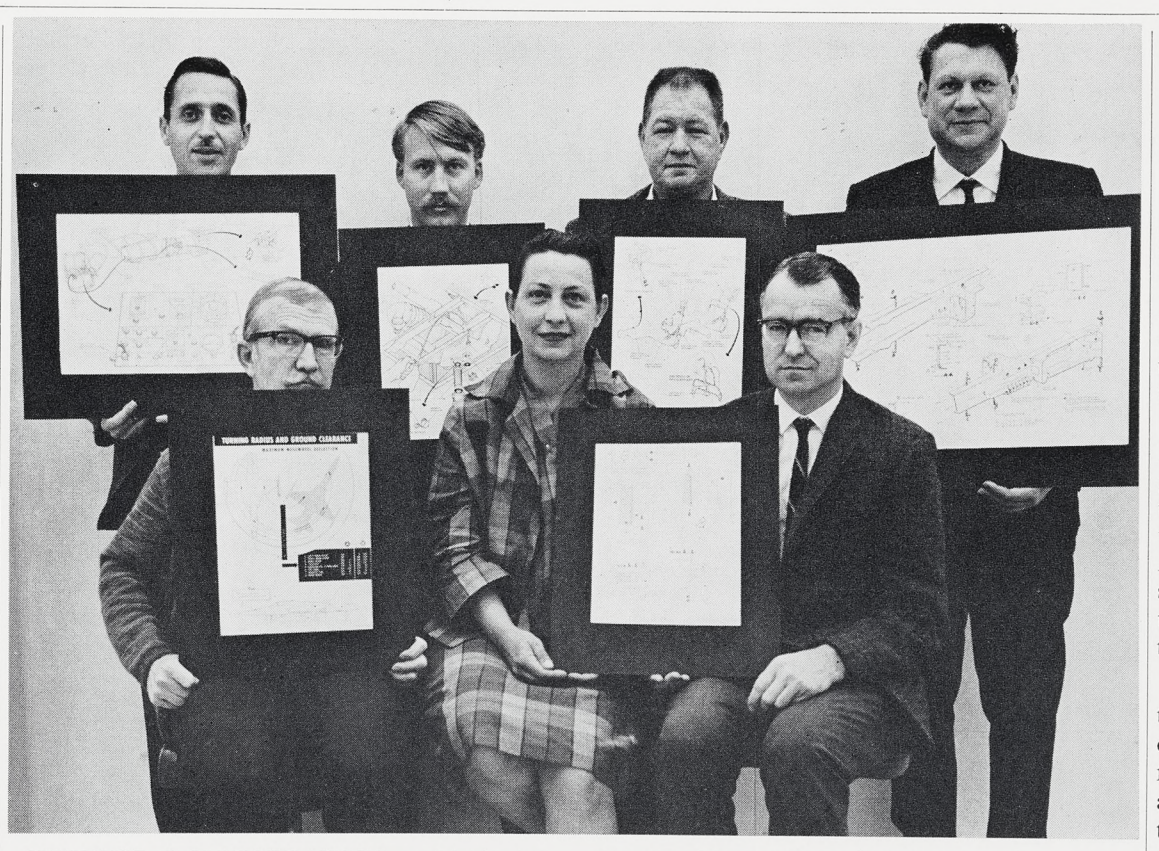
The first tour, a 16-day visit to the Caribbean area, departs June 8 and returns June 23.

The Alaskan venture begins September 5 and concludes September 18. It includes air travel to Victoria, British Columbia, the inland waterways boat trip to Skagway, Alaska, plus bus-rail and air travel on to Anchorage and return via air.

The tour price is $745 per person and includes many meals as well as travel and accommodations.

Ice Show Seats on Sale

Discount tickets for the 5 p.m. May 5 performance of Ice Capades at the Los Angeles Sports Arena are still available at NRC ticket outlets at all Northrop facilities.



TECHNICAL ILLUSTRATORS — Displaying their winning entries in the 15th annual Technical Illustrators' Management Association industrial art exhibit are these Northrop employees. Seated are (from left) Roy Holes, Donna Boyd and Sverre Figge. Standing are (from left) Irwin Appel, Norman Soucy, Glenn Solomon and John Kayser. Their entries were displayed at the Museum of Science and Industry in Los Angeles.

Mark Dickerson Named Winner Of Scholarship

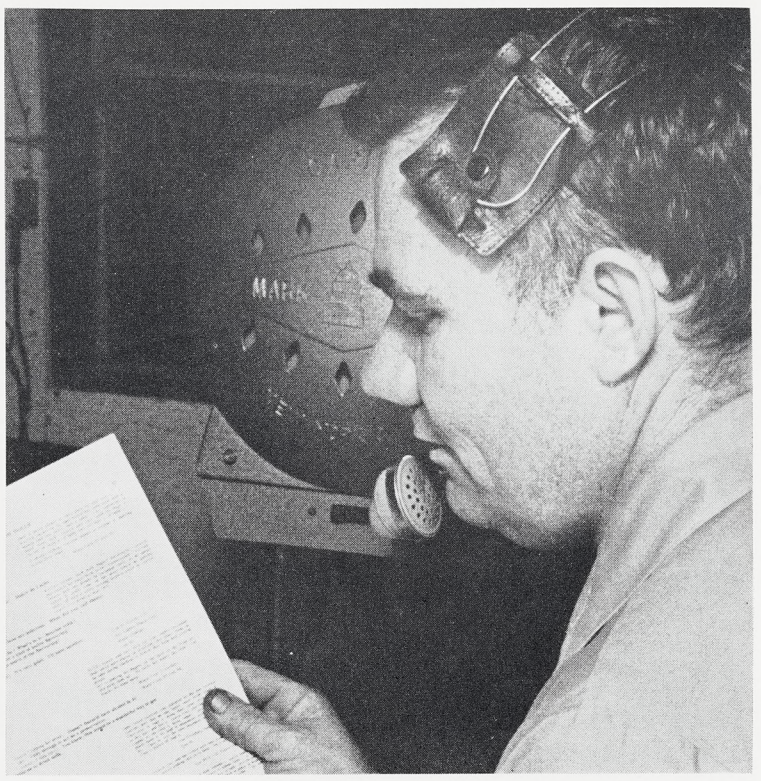
Mark C. Dickerson, a senior at George Washington High School in Los Angeles, has been named 1968 recipient of the Northrop Achievement Scholarship, awarded under the auspices of the National Achievement Scholarship to outstanding Negro students.

Mark is the son of Mr. and Mrs. Paul Dickerson of Los Angeles. He hopes to study aeronautical engineering at Cornell University. He is a cadet in the Civil Air Patrol and for the past two summers has participated in National Science Foundation activities.

Mr. Dickerson is one of more than 280 outstanding Negro students across the nation—including four in Southern California — awarded four-year scholarships this year. Northrop is one of 55 corporations and foundations sponsoring the scholarships which this year have a combined value of $1.4 million, according to NMSC.

'Guys and Dolls' Features Four Northrop 'Guys,' 'Dolls'

'GUYS AND DOLLS' DIRECTOR Fred West suggests an amusing approach to a bit of dialogue prior to a final rehearsal for the current Chapel Theatre production in Lomita. Northrop employees (from left) Connie Sampson, Norair; Carolyn Louise Moffett, Corporate Laboratories; and Patricia Lester, Nortronics; acknowledge that there's humor in the scene. The Damon Runyon book-Frank Loesser musical has, in just two weeks before area-wide theatre-goers, been sold out for nearly half of its scheduled 30 weekend performances.



LIGHTING CUES are checked out well in advance of each "Guys and Dolls" performance by veteran lighting technician George Bingham, a 15-year Northrop employee now working in Norair Metal Bond shop. Mr. Bingham spends much of his spare time handling lighting chores for various community theatre groups in the Los Angeles area.

Chapel Theatre Group In Seven-Week Run

Employees From Nortronics, Norair, Corporate Labs in Lomita Production

Four Northrop employees are being seen currently keeping company with such characters as Nathan Detroit, Harry-The-Horse and Nicely-Nicely. Fortunately for Patricia Lester, Carolyn Louise Moffett, Connie Sampson and George Bingham, it's all for the love of the stage as Chapel Theatre continues to perform Damon Runyon's "Guys and Dolls" to standing room only at their new playhouse in Lomita.

The show, which opened to a full house just 12 days ago, was originally scheduled for five weeks of 14 Thursday through Sunday performances. Already ticket sales have pushed the oldest established permanent floating Frank Loesser musical into a seven-week run with at least 30 performances set for the boards.

Mrs. Lester, a Nortronics secretary to Roger DiJulio at Palos Verdes, is cast in the leading role of Adelaide, a brassy-voiced night club "entertainer" who wants more than anything else a house in the country, Nathan Detroit and children. Mrs. Lester has been with Nortronics Finance for three years and has spent seven years of spare time as an actress in community theatre.

Recently, she studied with Agnes Moorehead, and has received instruction in theater arts and voice at El Camino College.

Miss Moffett is an accountant at Northrop Corporate Laboratories. Her background includes touring in summer stock for three years before coming to Northrop. She has acted in the company of John Carradine, Joe E. Brown and Zazu Pitts.

One of the "Dolls" in the show is Connie Sampson, a secretary in Systems Reliability at Norair.

She's been a performer since she was 6, is an accomplished pianist and blues singer, has done professional modeling since she was in high school, and is an artist. She recently appeared in Long Beach Civic Light Opera productions of "Gypsy" and "Picnic."

A Norair employee you won't see if you catch "Guys and Dolls" is George Bingham of the Metal Bond shop. He is responsible for the lighting on this show as well as numerous others in recent years around Los Angeles.

A special performance for Northrop employees has been arranged through the Personnel Activities office at Norair. Seats can be reserved for the 8 p.m. show on Sunday, April 21, at the reduced rate of $2 by telephoning the Norair Personnel Activities office at ext. 2486. Tickets for all other performances are $2.50 and are available at the theatre box office at 2222 Lomita Boulevard in Lomita, or by telephoning 372-9636 for reservations.

IT'S A FACT AT NORTHROP

Northrop is one of the leading producers of automatic navigation systems. The astro-inertial guidance and navigation systems used in the world's fastest airplanes — the USAF-Lockheed SR-71 — and the inertial-Doppler navigation system used in the world's biggest airplanes — the USAF-Lockheed C-5's — are both built by Nortronics' Navigation department in Hawthorne. The gyroscopes for the navigation systems, as well as for many of the guidance systems made by other companies, are produced by the Precision Products Department in Norwood, Massachusetts.

In addition, Nortronics is at work building shipboard and airborne radio navigation receivers for the Navy's new Omega worldwide, all-weather navigation system for ships, submarines and aircraft. The potential market for these receivers is very large.

Disneyland Ticket Sale Under Way

The annual rush to obtain tickets to Northrop Night at Disneyland is now in progress throughout Northrop facilities.

This entertainment buy of the year comes off May 25 when all attractions, features and thrills of the "Magic Kingdom" are reserved exclusively for Northrop employees, their families and guests from 8 p.m. to 1 a.m.

The cost, $3.75 per person, is all-inclusive. That is, it buys admission to the park and unlimited use of all Disneyland attractions, with the exception of shooting galleries.

Tickets may be obtained through regular NRC outlets.

Opened since the last Northrop visit is an all-new Tomorrowland, including seven major new attractions. This new land, costing $23 million, is just one of many available at the Anaheim pleasure center.

SECRETARY OF YEAR?

Award Candidate Named

Mrs. Yauncey Newman, a Northrop secretary for nearly 10 years, has been nominated as a candidate for International Secretary of the Year.

Mrs. Newman is secretary to William A. Boggess, director of Northrop's Eglin District Office in Florida.

Mrs. Newman

She was nominated by the Temple Mound Chapter of the National Secretaries Association.

Mrs. Newman, the first candidate ever nominated by the chapter, holds a certificate in business administration from the University of Cincinnati, and received the rating of Certified Professional Secretary (CPS) in 1965. She joined Northrop in California in 1958, and worked in the Corporate office until moving to Florida in October 1966.

Selection of the International Secretary of the Year is based on background scores and interviews by a panel of judges. Scores are influenced by an individual's education, business experience, CPS rating and other activities. Judges score the candidates on appearance, poise and response to questioning.

Safety Guide Published

A handy pocket-sized book filled with information on an important subject — personal safety — will be distributed to all Northrop Norair employees Friday along with paychecks.

It's called an Employee Safety Guide.

Published with the well-being of every employee in mind, the book contains information, ideas and guidance to help individuals avoid accidents and injuries.

NEWEST FEATURE — The newest attraction at Disneyland is a $23 million Tomorrowland complex, featuring the "People Mover," "America the Beautiful," "Adventure Through Inner Space" and "Flight to the Moon." Northrop's annual night at Disneyland has been scheduled for May 25. Tickets are on sale and may be obtained through NRC outlets.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

For Sale

Range, Kenmore, 4-burner, $50. 675-2510. A

Loudspeaker, University Classic, folded horn 3-way system, lo-boy mahog. cabinet, 30-35 c.p.s. bass response, $140. 398-5019. A

Honda 50, 1964, C100, $100. 378-4676. A

Dinette Set, Virtue, chrome, 4 chairs, $40. 378-2609. A

Lanterns, 2 Coleman, gas, 2-mantle, & stove, Coleman, gas, 2-burner, $6 ea. or $15. 677-8868. A

House, 2-bdrm., dble. det. gar., 50'x150' R-2 lot, fenced, close to shopping, $18,000. 324-5422. A

Station Wagon, 1962 Ford, custom, 8,000 miles on new eng., air, stereo, $1,300. 370-2498. A

Station Wagon, 1962 Ford, some body damage, big T-Bird eng., auto. trans., $150. 833-9647. A

Surfboard, Bing, D.T. model Vol. II, 10'1", $70. 379-2804. A

Hedger, elec., $15. 633-2395. A

Corvair Monza, 1962, r/h, auto. trans., $300. Box 601. A

Scooter, Cushman, $35. 676-7429. A

Volkswagen, 1964 sedan, 46,000 miles, new clutch & valve job, $1,100. 379-8993. A

T-Bird, 1955, needs body work, $895. 674-5616. A

Bar, portable, modern, walnut finish, black padded arm rest, semi-circular, $110. 545-6064. A

Buick, 1967 Riviera, air, FM stereo, full power, 11,000 miles, $4,695. 634-7127. A

Acreage, 5 acres, near Lake Los Angeles, $5,990. 877-2219. A

Van, 1963 Ford Econoline, near new tires, $799. 644-2154. A

Vibrator, professional, hand roller 3-way, $15. 676-0938. A

Photo Enlarger, dble. condenser lens, 35 mm 2½x2½, 50 mm f3.5 lens, inc. adj. easel. $35. 839-5438. A

Slide Rule, 17-jewel selectron, & flight computer watch, $35. 375-7265. A

Pups, collie, AKC, papers, sable & tri, $75. 370-4475. A

Camper, 1967 Huntsman, 8', cabover w/extras on 1965 Chev., ½-ton, auto. trans., custom cab, big tires, 2 extra gas tanks, r/h, $2,395. 644-3803. A

Sailboat, 12' Firefly sloop, sails, all equip. & trailer, $595. 377-5862. A

Go-Cart, 15 h.p. Salisbury motor & trans., 7" wide slicks, deep rims, wide track, $100. 676-7109. A

Refrigerator, 2-dr. General Electric, 14 cu. ft., $50. 378-6662. A

Pontiac, 1966 GTO, h/top, 4-spd., 389 eng., $2,150. 376-7898. A

Pups, basset, tri-colored males, AKC, wormed & shots, avail. April 1, $75. 830-3816. A

Guitar, Vox, Phantom VI, $175. 374-8448. A

Honda, 1967 S90 w/rock guard & luggage rack, 1,100 miles, $250. 645-1274. A

Typewriter, Underwood noiseless, elec., office model, 15" platen, $75. 676-2196. A

Stereo 8 Tapes, classical & popular, reg. $3.50; twin pack $5. 323-6795. A

Luggage Carrier w/straps, $5. 644-5985. A

Golf Clubs, woods 1-3-4, MacGregor, irons 2 through 9 & wedge, H&B stainless steel, $65. 634-8423. A

Motorcycle, Yamaha, 250 cc, Scrambler, completely o/hauled w/guarantee, $300. 836-4340. A

Band Saw, Delta 14", back geared, ½ h.p., stand, $200. 944-5946. A

Golf Clubs, Walter Hagen, full set, 1-4 woods, 2-9 irons, putter, bag, cart, $75. 714-525-8983. A

Camper, 10' cabover, on 1959 ¾-ton Ford, air cond., butane refrig. & stove w/oven, $1,195. 324-2587. A

Chevrolet, 1953 2-dr., 41,000 original miles, std. shift, $350. 329-6420. A

Volkswagen, 1963 Sunroof, AM-FM, extras, $925. 327-0410. A

Travel Trailer, 17' Aristocrat, fully self-contained, used 3 times, 1 yr. old, $2,000. 377-6426. A

Mower, hand-type, heavy duty, Pennsylvania, $15. 327-2279. A

Pontiac, 1966 GTO, 389 cu. in., 4-spd., positraction, $2,150. 375-3901. A

MG, 1958, new tires, slight front end damage, $110. 370-4315, 329-3922. A

Dirt Bike, Royal Enfield, 250 cc, trials, knobbie tires, extra access., recently o/hauled, $250. 370-3109. A

Surfboard, 9'6" Gordon & Smith Hy III, $80. 375-6397. A

Flying Club Membership, 10 airplanes, at Van Nuys Airport, $300. 346-4152. A

For Sale

Cadillac, 1958 coupe, full power, air, $350. 327-2447. A

Pontiac, 1964 Grand Prix, p/s, p/b, stereo, wire whls., customized, $1,800. 371-5261. A

China Cabinet, walnut, Danish modern, sliding glass doors in top, $50. 532-4368. A

Corvair Monza, 1962, 4-spd. stick shift, r/h, good tires, $350. 755-1925. A

T-Bird, 1964, low mileage, $1,595. 377-9842.

Motorcycle, 1966 Yamaha, 250 cc, $425. 323-7544. A

Lot, 82½ x 275 ft., level, water, elec., near Lake Isabella, $295 dn., $2,950. 714-532-1361.

Reducing Machine, Stauffer, $45. 324-8618. A

Ford, 1963 Ranchero, auto. trans., r/h, just o/hauled, V-8 eng., take over $45 mo. pymts., $250. 714-539-9771. A

Saxophone, Selmer Bundy, E flat alto, used 4 mos., $220. 377-5853. A

Stove, coppertone, Gaffers & Sattler, gas, rotisserie oven, $100. 679-2456. A

Toilets, marine-type, for trailer or boat, $40 ea. 373-1932. A

Shotgun Shells, once fired, 20 ga., paper, over 400, $5. 327-4585. A

MG Magnette, 1956 4-dr. sedan, recently o/hauled, $350. 371-1439. A

Sleeping Bags, 2, hvy. duty, 5-lb. dacron filled, 42" x 84" hvy. duty air mattresses, $20 ea. 323-3796. A

Crib, mattress & bedding, $10. 323-4257. A

Surfboard, 9'7", $65. 323-9598. A

Gun, antique, converted flintlock, early 1800 vintage, $200. 377-7670. A

Station Wagon, 1961 Falcon Deluxe, stick shift, heater, good tires & brakes, $325. 831-5304. A

Vacuum Cleaner, Hoover, model 62 w/attachments, $19. $377-2064. A

Acreage, 2½ acres in Antelope Valley between Rosamond & Mojave, level, near Hwy. 14 & adopted freeway, $35 dn., $35 mo. inc. 4% interest, $3,500. 378-1026. A

Ski Boots, boy's size 3, $9. $329-3152. A

Station Wagon, 1961 Rambler Ambassador, V-8, p/s, p/b, p/w, fact. air, r/h, auto. trans., $425. 769-3345. A

Motorcycle, 1964 Triumph Bonneville, custom, chrome, $900. Box 602. A

Oldsmobile 98, 1954 4-dr., reblt. eng., r/h, auto. trans., near new tires, $150. 397-0881.

Parrot, Panama green-cheek, talks & whistles, $60. 714-544-4288. A

MG Midget, 1962, r/h, soft top, tonneau cover, 38,000 miles, $700. 325-1190. A

Sailboat, 8' Sabot Goft rigged, complete w/ sails, oars, $125. 377-7970. A

Radio Control for model airplane, citizenship analog proportional sys., complete w/ transmitter, receiver, other extras, $100. 941-7174. A

Pontiac, 1967 GTO, 7,000 miles, $3,200. 534-3410. A

Oldsmobile, 1963 Super 88 Holiday, 4-dr. sedan, air cond., full power, $1,095. 375-3914. A

Boat, 16' Wizard, fiberglass, elec. starter, big twin Evinrude 25, remote controls, trailer & many extras, $550. 645-0859. A

Volkswagen, 1965, 30,000 miles, $1,200. 293-5827. A

Chevrolet, 1957 Bel-Air, 2-dr., 283 V-8, auto. trans., p/b, p/s, $250. 636-5035. A

Cortina, English Ford line, 1965, 2-dr. sedan, stick shift, $875. 757-6960. A

Concrete Mixer, 3 cu. ft. w/semi-pneumatic whls., electric motor drive, Sears make, $90. 323-1698. A

Sewing Machine, portable w/attachments, $20. 320-3440. A

Table Saw, Craftsman 8" tilting arbor w/ stand, set of dado blades & ¾ h.p. ball bearing motor, $65. 714-528-7636. A

Honda, 1966 305 Scrambler, $450. 372-9706.

MGB 1800, 1966, radial ply tires, htr., anti-roll bar, recent valve job, wire whls., $1,695. 662-1642. A

Tape Recorder, Concord, stereo, 4-track, sound-on-sound, 2 mikes, extra speaker, $175. 325-3724. A

Autoette, elec., used 1 mo., needs new batteries, $400. 325-7154. A

Pontiac, 1968 GTO, Hydromatic, 5,000 miles, $3,200. 676-4680. A

Buick, 1954 4-dr., p/s, p/b, r/h, $100. 374-5712. A

Units, 2-bdrm., single family & duplex on same lot, 5 min. to Norair, terms, $36,000. 374-3542. A

Boat, 16', 75 h.p. Mercury o/board, $1,195. 329-1657. A

PCS, never used, complete system, remote control, proportional, 72 MHZ, 5 channels, $265. 754-3694. A

Camper-Trailer, teardrop, butane stove & icebox, 6 x 8 closed awning, spare wheel & tire, $175. 675-4156. A

Mangle, Ironete, $100. 321-2611. A

House, 4-bdrm., 1¾ baths, insulated, sprinklers, block wall, fireplace, enc. patio, bltin barbecue, $28,000. 320-6975. A

Golf Clubs, Golfcraft, matched set, vinyl bag & cart, 2 wedges & putter, $140. 370-2869.

Oldsmobile, 1962 4-dr. h/top, fact. air, p/s, p/b, p/seat, p/w, r/h, $695. 714-630-2796. A

Mercury, 1966 Parklane 4-dr. h/top, p/s, p/b, p/w, air cond., new tires, brakes & battery, AM-FM stereo radio, $2,295. 752-4339. A

Trailer Hitch for 1959-1967 Cadillac, 4130 steel, custom-made, $35. 329-6985. A

For Sale

Camera, Yashica Super 40, Super 8, auto., 9/36 mm power zoom, remote control, $80. 675-7530. A

Diamond Ring, women's white gold .48 carat, $115. 532-4757. A

Honda 50, 1965, $110. 363-3843. A

Sailboat, 8' Pram, $99. 324-3226. A

MG Midget, 1964, wire wheels, heater, $900. 370-2876. A

Range, Imperial, gas, 36", 4 burners, lge. oven, broiler, clock, timer, $40. 679-3896. A

Chevrolet, 1955, V-8, 4-dr., new tires, $295. 378-7116. A

Rotisserie Oven, General Electric, coppertone, $35. 676-6303. A

Bridal Gown, imported white lace w/silk cathedral train, bouffant veil secured by tiara of lace & pearls, size 10, $60. 783-6632, 676-6390. A

Dodge, 1966 Coronet 500, 2-dr. h/top, fully equipped, Dunlop SP-41 radials, $2,350. 456-2690. A

Trailer, custom alum. teardrop, sleeps 4, 3-burner stove, sink, & icebox, 6 x 10' canvas cabana, $250. 374-8036. A

Yamaha, 1964, 250 cc, rebuilt eng. & clutch, $400. 585-9139. A

Buick, 1963 Skylark, auto. trans., V-8, p/s, r/h, $1,150. 830-6163. A

Whirlpool Bath, Jacuzzi, used 4 times, $160. 935-0493. A

Pups, min. dachshund, female, AKC, dk. red, $100. 582-1079. A

Dishwasher, 1965 G.E. Mobilemaid, little use, $65. 378-0603. A

Movie Camera, Anscomatic ST/87 Super 8, f:1.7, f:8.5, 26 mm Chinon reflex zoom lens, auto. light meter readings, other extras, $50. 370-5148. A

Corning Ware, complete set, $50. 532-7663. A

Lawnmower, Craftsman reel-type, power, 20" w/new catcher, $40. 714-528-7636. A

Razor, Sunbeam Shavemaster, elec., late model, seldom used, $14. 378-5175. A

Mustang, 1967 h/top, 289 V-8, low mileage, over $900 optional equipment, air cond., $2,495. 805-498-2056. A

Pickup Truck, 1950 Chev., ¾-ton w/cabover camper, wired for 110, '55 6 cyl., 4-spd., $500. 374-5792. A

Clothes Dryer, Westinghouse elec., $50. 370-0990. A

Volkswagen, 1965, Variant S squareback, $1,500. 430-4407. A

Dog, cocker spaniel, 2½ yrs. old, AKC reg., needs good home, inc. doghouse, $35. 348-4874. A

Poodle, black, female, about 6 mos. old, shots & license, $12.25. 541-1423. A

Lot, view o/looking Lake Elizabeth on paved street, electricity & water, 10% down, $4,150. 805-947-8389. A

Pickup, Ford F-100, 1965, 8' bed, good tires, 35,000 miles, $1,350. 805-769-4753. A

Camera, Minolta SRT-101, f:1.7 w/behind-lens meter, Minolta tele., 135mm & wide angle, 35mm, lenses, auto., used 3 or 4 times, & binoculars, Nikon 7x35, gadget bag, never used, $450 or sell sep. 376-4473. A

Camera, 35mm Leica IIIf w/50mm Nikon 1.4 lens, speeds to 1/1000, self-timer, $150. 714-626-1597. A

Crib, mattress, bathinette, $25. Box 603. A

Mini-Bike, Briggs & Stratton, $75. 246-4495. A

Chevy II, 1963 2-dr., 100 Series, r/h, $500. 714-540-7283. A

Chevrolet, 1961, Impala, 2-dr. h/top, 283 cu. in., auto. trans., r/h, front & rear spkrs., 4 new Atlas Plycron tires, $550. 644-2717. A

T-Bird, 1957, all power, w/portholes, $1,550. 329-2571. A

House, 2-bdrm., on R-2 60 x 129.7 lot, in Lynwood, 2-car det. gar., 22' x 30' x 6' high fenced pool area, assume GI 5¼% 1st T.D., $17,500. 631-8333. A

Lot, lake view, new boat slip, Bass Lake, large, fairly level, nice timber, $750 dn., $50 mo., $3,500. Box 604. A

Cemetery Lots, 4 in Eventide sec. of Green Hills Memorial Park, perpetual endowment care, $1,500. 376-4677. A

Dodge, 1967 Charger, p/s, p/b, r/h, air cond., auto. trans., 383 eng., 4 barrel carb., 10,500 miles, $2,900. 691-3753. A

Wheels, set of 4, 5½"x14", for Plymouth, with or w/out 8.25x14" Goodyear w/w tires, $15. 439-6432. A

Furniture, various pieces, $600 or sell sep. 644-4529. A

Drum Set, Ludwig, 4-pc., 22" bass, hi-hat, cymbals, black diamond pearl, $325. 375-6337.

Lots, 2, Yucca Valley, 1.12 acres, water, electricity, $2,250. 714-365-3651. A

Pup, ¾ shepherd, ¼ husky, healthy, females, $25 ea. 547-1047, 375-9397. A

Wedding Ring Set, $200. 376-6182. A

Guitar, $20. 679-6509. A

Oscilloscope, Eico, 5", $15. 677-3920. A

Dune Buggy, 1961 VW, fiberglass, reblt. eng., tuned exhaust, $1,500. 370-2876. A

Stove, 36", gas, $10. 379-1049. A

Corvette, 1967, 327 eng. w/350 h.p., p/s, air cond., new tires, $4,000. 320-0206. A

Cabin Cruiser, 16½', fully equipped, 110 Mercury eng., $1,900. 375-0351. A

Wanted to Buy

Dryer, gas, in good condition. 370-7749. B

Freezer, upright, reasonable. 541-1923. B

Bunk Beds in good condition & reasonably priced. 372-8502. B

Wanted to Buy

Engine, 1950-1954 Chevrolet, in good running condition, also 6 volt car radio. 325-0731. B

Air Conditioner for '66 Comet V-8. 328-3306.

Enlarger, 35 mm to 2¼ x 2¼, condenser-type. 378-5856. B

Projector, 16 mm, any style, any age, in running condition. 632-8696. B

Fiddle Case, used, bass. 329-6039. B

Speaker System, AR2ax or KLH. 833-5594. B

Outboard Motor, 9.5 h.p., either Johnson or Evinrude. 327-8927. B

Free (To Be Given Away)

Uniforms, Civil Air Patrol, AF blues, fatigues, size 16-18, misc. items. 754-9889. D

Top Soil, sandy loam, you haul. 326-5459. D

Dog, German shepherd, young adult, blonde, male, needs good home. 329-1018. D

Rentals Offered

Apt, 1-bdrm., cpts., dps., bltins, ground flr., no pets, adults only, water & trash pd., $95 mo. 676-9492. E

Studio Apts, 2 & 3-bdrm., now under construction, ready by June 1, cpts., dps., all elec., bltin range, pvt. patios, many extras, no pets or children under 12, near Del Amo shopping area, $165, $195 & 275. 326-4944.

Apt, 1 & 2-bdrm., cpts., dps., bltins, closed gar., all elec., 10 min. to PV, 20 to Hawthorne, $100 & 125 unfurn.; $120 & $145 furn. 375-2091, 375-9397. E

Cabin, in Green Valley, $25 w/ends; $45 wk. 324-0649. E

Vacation Cabins, Idylwild, 1 & 2-bdrm., fireplace, stream, patios, $20-$35 w/ends; $45-$75 wk. 754-5288. E

Apt, 1-bdrm., unfurn., gar., adults, 2 miles from Norair, $90. 674-0755. E

Apt, 2-bdrm., furn., lge. pool & patio, closed gar., near El Camino, adults, $165. 329-5986.

Vacation Cabins, Lake Gregory & Crestline, sleep 6, make reservations for June through Sept., $25 w/ends; $60 wk. 391-2040. E

Cabin, Lake Arrowhead, modern, north shore, 200 ft. from lake, $100 wk. 375-2255. E

Rentals Wanted

House, 2-bdrm., yard, in Orange County, have baby & small dog. 714-630-1914. F

Garage, small, to use as darkroom, Hawthorne area. 644-3187. F

Half of dble. garage or all of single, for storage of boat & trailer, South Bay area. 679-2642. F

Child Care Offered

Child Care, hot lunch, vicinity Lincoln & Manchester. 670-0372. G

Child Care Wanted

Child Care, 2 children ages 4 & 7, 3:30 p.m. to 1 a.m., my home, will furnish transportation. 379-6522. H

Lost

Necklace, black pearl, either in Anaheim parking lot or Bldg. Y-10 on March 13. 714-879-9173, 714-871-9342. J

Personals

Fly Cessnas & Bonanzas, at Hawthorne, pros & students accepted. 671-2852. L

I wish to extend my warmest appreciation to the wonderful people at Northrop who honored me with their friendship. Also, my thanks for the retirement party & lovely gifts. MAY WARD. L

I want to thank all the wonderful people who made my last day at work a very memorable one. I shall never forget their friendliness & kindness to me. MARIA LUTZOW. L

Rides and Riders

Rides Wanted

7:24 a.m. — 4:06 p.m.

Imperial & Old Riverschool Rd., Downey. Two riders, if only room for 1 O.K. Rita Chastain, Mariposa ext. 4075, 862-5350.

8 a.m. — 4:45 p.m.

Imperial & Lakewood Blvds., Downey. Morris Brown, Norair ext. 4487, 861-8508.

Manchester & Sepulveda, Los Angeles. Prefer ride near Loyola University or Westchester Playground. Lola Shadlaus, Norair ext. 1006, 670-6017.

Personals

We wish to thank the many Northrop friends for our retirement gifts. A special thanks to the Recreation Club for the kind words & gifts, they will never be forgotten. EARL & RUTH BIRD. L

To all my friends, a heartfelt thanks for the many lovely gifts, money tree & the wonderful party. Even though I will miss you all, but with so many friends wishing me good luck, makes my retirement happier. HELEN FORNEY. L

For Sale or Trade

Swing Set, dishes, tools, furn., auto parts, $75 or sell sep. or trade for trailer hitch, no-sway. 677-6712. M

Corvair, 1960, $300 or trade for a piano. 679-8029. M

Ski Boat, 14' Wizard, 30 h.p. Mercury, trailer, $500 or trade for cabover camper. 638-5076. M

Home, stucco, in Inglewood, 3-bdrm., 2 baths, den, cpts., h/wood flrs., 2-car det. gar., patio, b/wall fence, $9,000 equity $26,000 or trade for land or home in Malibu Canyon or Thousand Oaks area. 671-8401. M

Pistol, Smith & Wesson .38 special w/6" barrel, 400 rounds of ammo, $95 or take in part trade for .45 auto. 379-3487. M

Recorder, stereo, Ampex 2070, 2 4001 spkr. sys., Garrard SL-65 w/Pikering ACE-3 cart., other access., approx. 100 taped albums, $1,250 or trade for Volkswagen, 1965-'66. 645-6720. M

Movie Projector, 16mm Ampro sound/silent, $150 or consider trade toward Mini-Bike, 4-5 h.p., drafting machine, or guns. Box 605. M

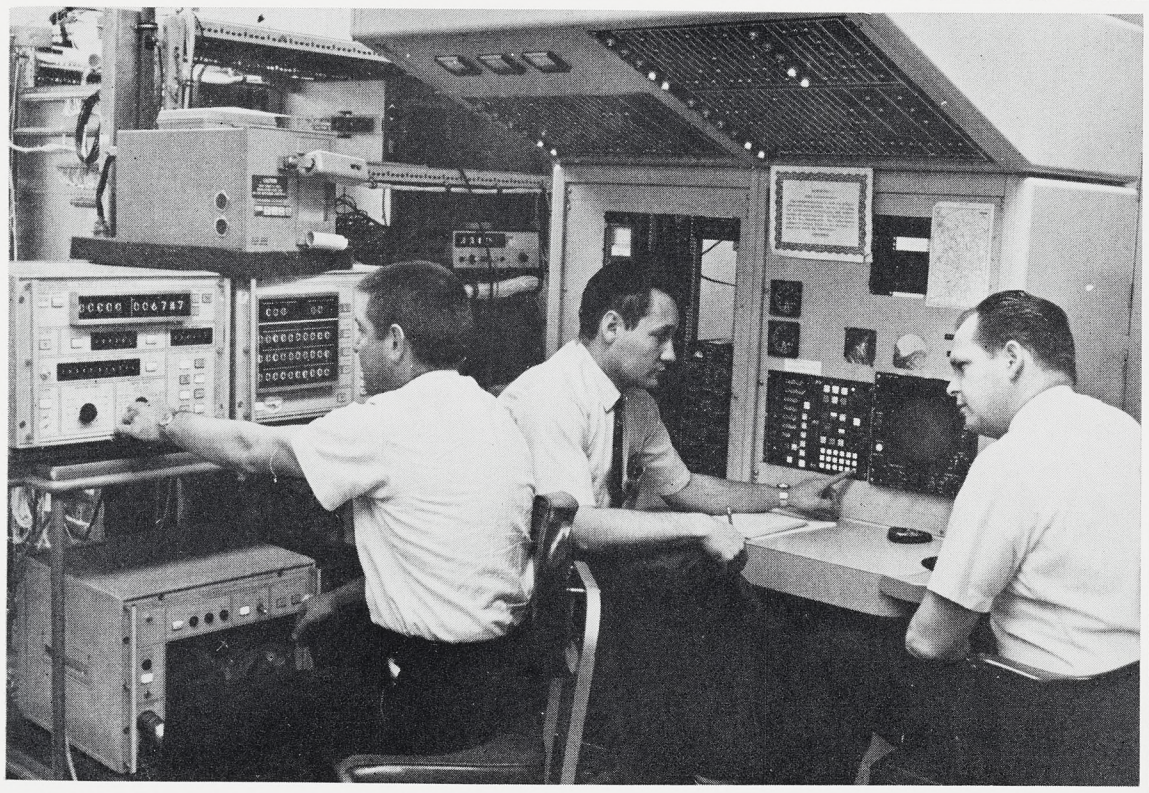
Employee's Son To Head Council

Norman A. Barker, 20, the son of Northrop Norair's J. Norman Barker, an executive assistant in Overhead Forecasts and Settlements, has been named president of the Interfraternity Council at the University of Southern California.

A junior at USC, Mr. Barker is a member of Phi Gamma Delta social fraternity. He served as president of his pledge class and last year was an advisor to the IFC pledge council.

Prior to entering USC, Mr. Barker attended El Camino College. He also worked one summer with Northrop Data Processing and is a former Science Explorer Post president and president of the De Molay Western League.

'MONEY TREE'—May Ward (right), retiring after 26 years with Northrop, receives a unique gift from her colleagues in Corporate Accounting—a "tree" filled with cash. Making the presentation are Don Lutz, director of Corporate Accounting, and Audrey Caldwell, who replaced Mrs. Ward as secretary to Mr. Lutz.



NORTRONICS' IETS, or Interface Evaluation Test Set, right, awaits further tests by our men in Marietta assigned to Lockheed-Georgia on the C-5 Program. The Nortronics engineers shown conducting a checkout on the avionics simulator are (from left) Jim Stephens, Fred Zeiss and Bill Wood. The IETS, here in the navigator's station, simulates avionics equipment which is not yet available for testing.

THIS INTEGRATED COMMAND STATION will be utilized during the SEALAB III, "Man-in-the-Sea" project. The van, in addition to being the communications and command center, contains audio and video recording instruments, shown here in a simulated operation by Keith Hughes, Nortronics technician, for use in collecting and analyzing data during the 60-day Sealab experiment. Built by Nortronics for the Navy's Deep Submergence Systems Project, the van will be a key link between the surface support ship, on which it is installed, and the underseas laboratory manned by five alternating teams of aquanauts.

'GREAT IMPOSTERS'

'C' Basketball Play Ends

Final standings are in, and results of season play in the Northrop "C" basketball league prove The Imposters best of the four-team loop, according to O. M. Stubblefield, league commissioner.

The title went to the Nortronics team as it won handily in the final contest, 60-42 over Sam's. Dave Rice led the scoring for The Imposters with 24 points, followed by Fred Locarnini and John Lavender with 15 and 10 points.

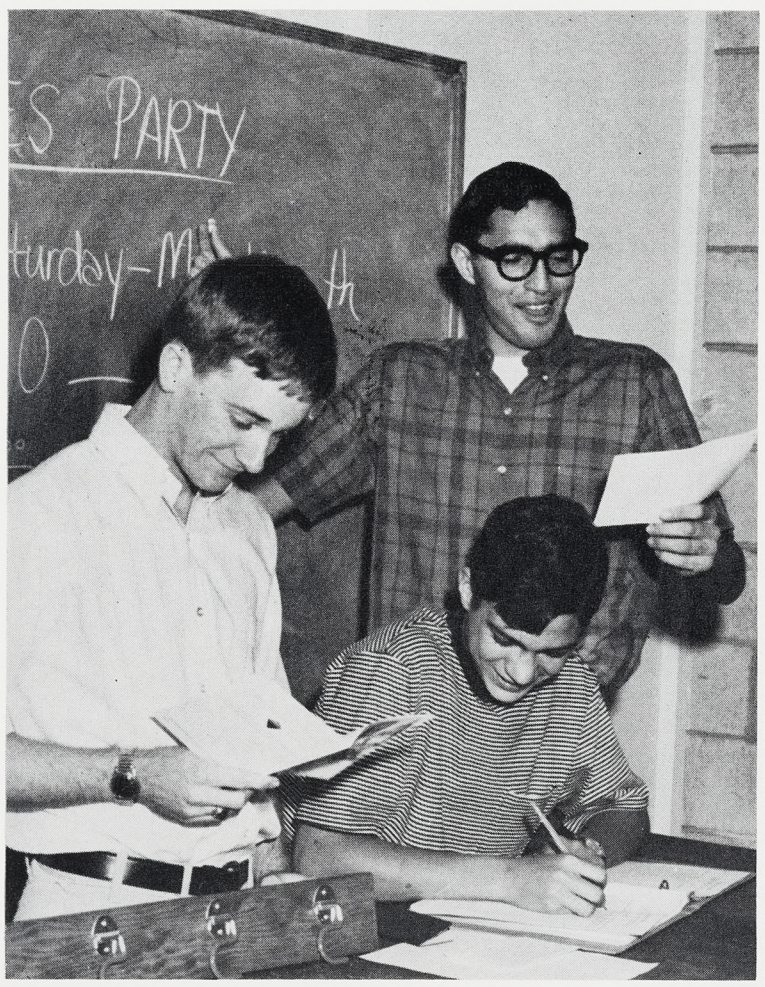
Members of the winning squad are manager Dave Rice, Glen Bailey, Dan Kaufman, Joe Kubas, John Lavender, Fred Locarnini, Bob Sadil and Lauren Splittgerber.

The Imposters' only defeat in an impressive 8-1 season came at the hands of the runner-up Researchers, managed by Dwight Waterman. Other team managers are Roger Schillings of the Finks, and Frank Michaud for Sam's.

There will be a basketball banquet featuring trophy presentations for all leagues in April, upon completion of play in the "A" and "B" leagues.

"C" LEAGUE
Final Standings

	Won	Lost
IMPOSTERS	8	1
RESEARCHERS	7	2
FINKS	3	6
SAM'S	0	9



NEW 'ORCO' OFFICERS of the Orange County Junior Achievement company, which is counseled by Nortronics Anaheim, have been elected for the spring term. They are (from left) Pat Grimm, treasurer; Rick Hernandez, vice president of Sales; and Rick Zavala, president. Marilyn Mack, secretary, and Tom Manoogian, vice president of Manufacturing, were not present when the picture was taken. The officers are shown planning an ORCO sales party.

SCOTLAND

(Continued from page 1)

left side of the tight, winding road from Rhu to Dunoon where almost no billboards blot the countryside. At Dunoon, the submarine tender U.S.S. Simon Lake is anchored in the salt water inlet known as Holy Loch.

It's a long way from Anaheim, but Nortronics maintains a field office aboard the Simon Lake in support of the Polaris Missile Test and Readiness Equipment (MTRE) which serves U. S. submarines of the Polaris fleet.

In his liaison and field representative responsibilities, Mr. Bulman deals with Nortronics' two other field representatives, Rod Mills, who's also in Nortronics field work at Coulport, and Maurice Brown, another Nortronics field engineering representative, whose office is on the tender.

During their tenure there, the Bulmans have traveled throughout the 400-mile length of Scotland. And, in the long career of Mr. Bulman, including six years of Nortronics field service, he's been to many parts of the world, but as yet has not visited Vietnam, where his 22-year-old son, Glenn, II, is a corporal with the First Marine Division.

NRC Softball League Forming at Anaheim

An in-plant Nortronics softball league is now being formed at Anaheim with play set to begin on April 30, according to John Burke, acting NRC softball commissioner.

Those interested in playing in this slo-pitch competition may contact Mr. Burke on Anaheim ext. 233 or one of six team managers.

The managers are Ken Murray, Y-1, ext. 324; Frank Rangel, Y-1, ext. 1160; Bob Rogers, Y-12, ext. 477; Don Ross, Y-4, ext. 431; Gary Smith, Y-42, ext. 836; and Harry Smith, Y-12, ext. 1297.

Games will be played from 5:30 to 7:30 p.m. on Tuesdays and Thursdays at Ball Junior High School in West Anaheim.

Further information is available from the commissioner.

MEETING TONIGHT

Art Club Offers Instruction

Free instruction by professional artists is being offered as a special incentive in the interest of attracting new members to the Nortronics Art Club at Anaheim, according to NRC Art Club Commissioner Harold Leff.

The Club meets every Wednesday evening from 7 p.m. to 10 p.m. in the NRC Clubhouse at 1834 West Valencia in Fullerton. It is open to all employees and their guests, and especially welcomes beginning artists. Members draw and paint in all media including acrylics, oils, charcoal and water colors, and bring their own materials. The club furnishes easels to those who do not have or do not wish to bring their own.

Tonight's weekly meeting will feature a Life Drawing with the first hour to be spent in five to 10-minute quick sketches, and the remaining two hours to be devoted to one pose. Instructor for the evening will be Chuck Best.

"Every attempt is being made," says Mr. Leff, "to vary our routine from one meeting to another and operate our club like an art school. In line with this approach, we are offering a different professional artist to instruct every two weeks."

Models are provided on alternate Wednesdays. Other evenings are devoted to workshops in which members work on their own projects or join in painting still life or landscapes.

Further information concerning the NRC Art Club can be obtained by telephoning Mr. Leff on Anaheim ext. 1184.

Van Ordstrand Appointed System Programs Manager

The assignment of W. P. Van Ordstrand, program manager of TEAMS, to program manager, System Programs, has been announced by F. W. Lynch, Nortronics vice president and Anaheim manager.

In his new capacity, Mr. Van Ordstrand is responsible for the Anaheim department tasks on assigned programs to be pursued jointly with Northrop Systems Laboratories. Initially, he is concerned with Anaheim activities as they relate to the ATAR project.

Mr. Van Ordstrand

Mr. Barry

Mr. McKenzie

In this assignment, Mr. Van Ordstrand continues to report to Mr. Lynch.

Replacing Mr. Van Ordstrand as TEAMS program manager is T. S. Barry, deputy program manager, TEAMS.

J. N. McKenzie, formerly assigned to the Nortronics Marketing staff, replaces Mr. Barry as deputy program manager, TEAMS. Mr. McKenzie has been with Nortronics since 1954 and has held both technical, supervisory, and staff assignments in Engineering and Marketing. He has B.S. and M.S. degrees in electrical engineering from Stanford University.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 7 | April 10, 1968

INSIDE THE MEDICAL VAN, Jim McCarthy (center), Nortronics Bio-Medical Systems engineer, and Lt. Commander James Vorosmarti, U.S. Navy DSSP Technical Office, brief members of the press on the operations and objectives of the command and medical vans. Forty national and regional newspaper, television, radio and magazine representatives attended the press preview, preliminary to the Sealab tests due in the fall.

DSSP Sealab Vans Unveiled at Nortronics

Media Representatives Gather at Anaheim For Look at Command, Medical Units

The Sealab III command and medical vans—critical components of the Deep Submergence Systems Project (DSSP) Man-In-The-Sea (MITS) program — have been unveiled to news media by the U.S. Navy and Nortronics at the Anaheim facilities.

Representatives from national news services and newspapers, magazines, television and radio gathered for the day-long activities at the Nortronics Anaheim Facility. They saw and toured for the first time the red, white and blue house trailer-type vans that represent surface support for the Sealab aquanauts.

The group was welcomed by Frederick Stevens, vice president and Nortronics general manager, who introduced the man who will be Sealab III's on-scene commander, Commander Jackson Tomsky, USN. Also present from the Navy Medical Corps were Captain George Bond, MC, USN, the principal investigator for Sealab III, and Lieutenant Commander James Vorosmarti, MC, USN, from the DSSP Technical Office. Representing Nortronics was G. N. Mangurian, DSSP program manager.

The vans, housed at Anaheim in a special room in Y-2, and positioned in tandem just as they will function aboard the support vessel, were open for inspection by the press. Navy personnel and Nortronics technicians were available to explain the intricate engineering and elaborate back-up systems that present to the program an unsurpassed man support capability.

With the presentation of the vans, the Navy and Nortronics now look forward to the first Sealab III tests in the ocean off San Clemente Island by late fall.

Camera Club Plans Course in Darkroom Work

A short course on film developing and enlarging will be offered to members by the NRC Camera Club at Anaheim.

Instruction sessions begin with the next regular meeting on April 19, at 7:30 p.m. in the NRC Clubhouse in Fullerton.

The meeting will also feature a special Kodak slide program, "Let's Make An Enlargement."

The purpose of the course is to acquaint camera fans with basic black and white darkroom practice, in preparation for the introduction to color enlarging.

Further information can be obtained from Harry Dent, commissioner, on Anaheim ext. 607.

Mr. Dent pointed out that for this particular session on enlarging, a club member has volunteered to donate the necessary photographic paper. Normally, members provide their own camera and photo supplies.

DISCUSSING SEALAB is Lt. Commander C. W. Larson, DSSP Public Affairs officer, as he responds to interest shown by members of the media who gathered information for reports on the Sealab III progress. G. N. Mangurian (second from right), DSSP program manager, represented Nortronics at the press briefing. The Sealab III vans will be shipped to the San Francisco Naval Shipyard later this month for installation aboard the IX-501 surface support ship.

Caribbean Tour Meeting Planned

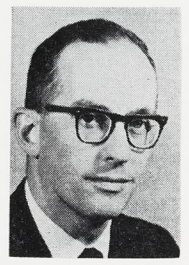
A second organizational meeting for Northrop families interested in a Northrop Travel Club group excursion to the Caribbean will be held at 8 p.m. April 19 at the Hawthorne Airport building.

This 16-day visit to New Orleans, Nassau, Miami, San Juan, St. Thomas, Kingston, Ocho Rios and Montego Bay departs June 8 and returns June 23. The cost per person is $666 plus tax.

Brochures are available at Personnel Activities outlets.

C-5 Director At Air Force Conference

The system utilizing the unique Inertial - Doppler Navigation Equipment (IDNE) — built by Nortronics for the world's largest airplane — was discussed last week in a nine-minute slide presentation at the Air Force Association's National Convention in Atlanta, Georgia.



Mr. Balsam

Lloyd Balsam, Nortronics C-5 program director, outlined the major functional groups of the system as an inertial measurement unit, a doppler radar, a computational system and navigation display and control panels. He told the gathering that the doppler and the inertial portions of the system will each have a reliability of at least 1,000 hours meantime between failures.

Mr. Balsam also spoke of the IDNE's relationship to the on-board radar equipment.

VIGICON VISIT

Allied Officers in Tour

Seventeen naval officers from 11 allied nations were the recent guests of Nortronics Palos Verdes, where they attended a briefing on the Vigicon command and control unit and saw a sample Vigicon exercise.

The officers are attending the United States Navy's Anti-Submarine Warfare Training School in San Diego, where a Nortronics-built Vigicon unit is used.

The officers were given two orientation briefings, and then saw a 60-minute exercise in the Vigicon display area. The Vigicon command and control unit makes possible the simulation and visual display of various strategic situations. The U.S. armed forces and the National Aeronautics and Space Administration are among Nortronics' Vigicon customers.

Participating in the tour were:

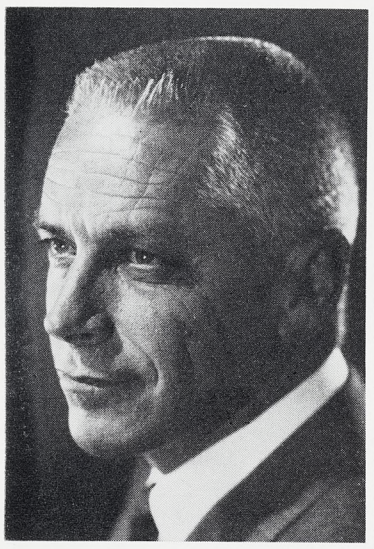
Rear Admiral Sun Tzu-Tsung, Republic of China; Captain Hak-Yong Hyon and Captain Chong-Hyok Chong, Republic of Korea; Commander Salvador Gomez and Commander Osvaldo Fourzan, Mexico; Commander Antonio Luiz Franco de Sa and Commander Jose Lauria Sobral, Brazil; Captain Bodhiphala Pravit, Thailand; Colonel Jorge A. Juica, Chile; Captain Emilio Felix Altesor, Uruguay; Captain Hiroyuki Koyashiki, Japan; Commander Fernando de Salas, Spain; Commander Cesar Marquez, Venezuela; and Lieutenant Commander Alfredo Valente Divino, of The Philippines.

VIGICON BRIEFING—B. H. Ervin (standing), director of Division Forward Planning for Nortronics, presents a briefing on Vigicon to a group of 17 naval officers from 11 allied nations. The men are attending the U.S. Navy's Anti-Submarine Warfare Training School.

Ventura's Young Receives Sloan Fellowship

Robert W. Young, manager of the Quality Assurance department at Northrop Ventura, has been selected as a Sloan Fellow for study of advanced management techniques at the Massachusetts Institute of Technology.

He was approved for attendance to the select 12-month program by Thomas V. Jones, Northrop president and chairman of the board, as part of the Corporate-wide program of management development.



Mr. Young

Only 50 executives were accepted this year by the M.I.T. Sloan program from industry and government in the United States and abroad. Mr. Young will begin the course in June.

According to John Rushmer, Corporate director of Management Development, Mr. Young brings to five the number of Northrop executives who have completed or are taking advanced management seminar training at selected universities.

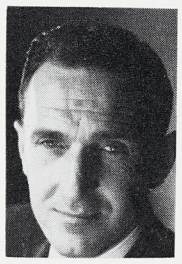
Other outstanding men with strong growth potential will be nominated in the future from the Northrop Corporate staff, operating divisions and subsidiaries to attend advanced management courses ranging from nine weeks to a year at such universities as Stanford, M.I.T. and Harvard.

Mr. Rushmer said that the special advanced university study is only one facet of Northrop's over-all program of upgrading management personnel in anticipation of greater responsibilities.

"The constant development of quality professional business managers must be one of the prime activities on the part of all Northrop management personnel," Mr. Rushmer said, "both with regard to self-development and in the development of others reporting to them.

"Business management is a profession that has a body of defined knowledges and can be learned. For the most part, these knowledges will come from on-the-job experience.

"However," Mr. Rushmer added, "we must not ignore the opportunity for learning new ideas and techniques that come with change, and we must therefore make available to our managers the opportunities to satisfy certain needs which can come only from the universities.



Mr. Grogan

Mr. Jennings

"We have selected certain quality programs such as the M.I.T. Sloan Program and Program For Senior Executives, the Stanford Sloan Program and Executive Program, and the Harvard Advanced Management Program."

Because of the heavy demand for these courses of study throughout industry and government, and the resulting lead time required to obtain allocated space, Mr. Rushmer said efforts are being made to plan future participation on a five-year basis.

Outstanding young and middle executives may become eligible for the advanced study courses through nomination by the general managers of the various Northrop divisions and operating units. Their selection is based upon identified needs resulting from Management Development activities and their potential for advancement within the Corporation. Final approval of selections is made by Mr. Jones.

After approval by the Northrop president, the executive must then be accepted within the limited number of positions available in the chosen course of instruction. At this level, the Northrop nominees are in competition with executives not only from all of the American business world, but from the U.S. government and other nations as well. This competition becomes particularly keen for a place in the more select classes such as the Alfred P. Sloan Fellowship program at M.I.T.

Mr. Harnett

Mr. Gasich

Others who are participating in, or have completed, special advanced management programs are Daniel J. Harnett, Corporate director of Contracts, Pricing and Programs; Welko E. Gasich, vice president and general manager of the Ventura Division; Robert L. Jennings, Ventura Division en-

(See SLOAN, page 5)

THREE 'ASTRONETTES'

Girls Take Apollo 'Journey'

When you are 13 years old, inquisitive, ambitious and imaginative, a trip to the moon appears well within the realm of possibility.

At least Debbie Roberson, Georgianne Lamb and Penny Moran, Torrance elementary school students, think so.

They visited Northrop Norair recently for a look at flight simulators, the Model shop and wind tunnel complex, in the company of Norair's Nancy Yager, a friend.

A few weeks earlier they flew to Houston for a day-long tour of NASA's Manned Spacecraft Center.

Both visits were in preparation for a "moon trip" that began last Saturday and ends next weekend, a seven-day, seven-night spin. It is aboard a three-fifths scale mockup of an Apollo spacecraft the girls have made and outfitted just for the "trip." They have one sleeping bag aboard, and packets of astronaut food supplied by one of their fathers, a bio-medical instrumentation engineer. Their only communication is via a two-way intercom.

The fact their spacecraft rests in the yard of one of their homes is of little consequence. They plan to document their feelings and thoughts and reactions in detail. Then they will compile a report and use it as part of a school science project.

The girls call themselves "Astronettes." Their spacecraft is named the "Geo-Deb-Ny" Apollo.

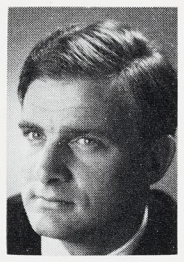
Page's Carter Appointed as Vice President

W. Douglas Carter, who has been with Northrop's Page Communications Engineers for 11 years, has been named a vice president of the Northrop subsidiary.

Mr. Carter formerly was director of Program Management-Southeast Asia. He has been an engineer on Page programs throughout the world. As a vice president at Page's Washington headquarters, he will continue to work on the company's Integrated Wideband Communications System (IWCS). The IWCS links military sites in Vietnam—covering 470,000 circuit miles. It is the largest program ever awarded a single contractor by the United States Army Electronics Command.

BARKLEY CHOSEN FOR TRAINING

Dick Barkley, a budget analyst at Northrop Ventura, has been chosen by the Air Force to participate in an Air National Guard Pilot Training Program, beginning next month.



Mr. Barkley

Mr. Barkley, a second lieutenant in the California Air National Guard, received news of his acceptance last month. He applied for the program in 1965, but quotas are so restricted that only four Californians, in addition to Mr. Barkley, have been accepted in the past two years.

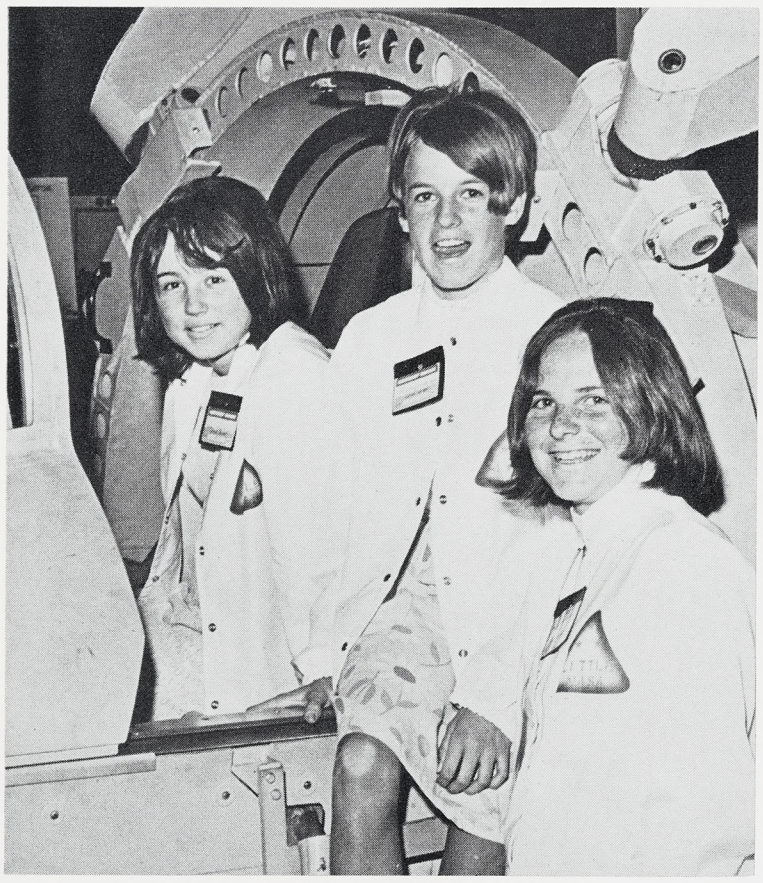
He is the nephew of Mary Lou Barkley, secretary to Dr. Donald Hicks, vice president and manager of the Corporate Laboratories.

Much of his training, Mr. Barkley said, will include flying the Northrop-built T-38 Talon jet trainer. The course is 53 weeks in length.

Mr. Barkley's father is Air Force Lieutenant Colonel Richard Barkley, who recently returned to the United States after duty at Tan Son Nhut Air Force Base in Vietnam.

The younger Mr. Barkley was selected after a series of examinations, including physical and aptitude testing. He is a 1966 graduate of the University of San Francisco, where he majored in marketing. Mr. Barkley, a bachelor, lives in Thousand Oaks.

He plans a career as a commercial airline pilot.



MEET THE 'ASTRONETTES'—At an age, 13, when most girls are far more involved in boys and clothes, this trio of Torrance elementary schoolers is building spacecraft replicas. They have visited NASA's Manned Spacecraft Center in Houston. They are (from left) Debbie Roberson, Georgianne Lamb, Penny Moran.

WATCH THAT NOSE — Georgianne Lamb tries the control of Northrop Norair's flight simulator as Debbie Roberson (left) and Penny Moran register interest in the flight display unfolding before them. This trio of 13-year-olds has built a three-fifths scale model of the Apollo spacecraft and is spending Easter vacation enclosed in it to register their reaction to confinement for a school science project.

FINANCIAL SEMINAR — James Willson, Northrop vice president of Finance, talks with managers and directors in one of eight lectures he delivered recently on financial matters. Officials from Norair, Nortronics, Ventura and the Corporate office attended the financial seminar.

Executives Complete Financial Seminar

Norair, Nortronics, Ventura, Corporate Managers, Directors Attend Two-Day Course

Thirty-two managers and directors from three Northrop West Coast divisions and the Corporate office have completed the first in-plant seminar on Finance for Non-Financial Executives.

The two-day lecture-discussion seminar was conducted by James Willson, Northrop vice president of Finance, as part of a continuing, multi-faceted Corporate Management Development program.

Included in the eight lectures delivered by Mr. Willson were such subjects as profit planning and budgeting, return on investment concepts and applications, and use of financial data in decision making.

The over-all objective of the seminar was "to improve the awareness of management level people of the 'big financial picture' and the effect of the line manager's actions on profit."

Responses of the Norair, Nortronics, Ventura and Corporate participants to the seminar ranged from "good" to "excellent." The seminar was developed by the Corporate Management Development programs office in response to a common need identified throughout the corporation.

IT'S A FACT AT NORTHROP

Many people think of Northrop as an aircraft company. It's true that design and production of aircraft represents the largest single category of Northrop business—about 45 per cent of the total. But, Northrop is more accurately described as a diversified aircraft, communications and electronics company.

Next to aircraft, communications represents Northrop's largest area of business. Northrop is a leading supplier of communications systems and communications components. Much of Northrop's communications business is carried on by the company's wholly owned subsidiary, Page Communications Engineers, Inc., with headquarters in Washington, D.C.

While the major part of the company's communications work is carried on by Page, communications capabilities and projects are active in many parts of the company. All three operating divisions — Nortronics, Norair and Ventura — have communications projects. In addition, the Hallicrafters Company — Northrop's Chicago-based subsidiary — is a leading supplier of communications equipment.

Altogether, Northrop communications business amounts to more than $110 million a year.

WORK EXPERIENCE

School Project Continues

In the spring of 1965, Northrop Norair cooperated with the Los Angeles City School District in establishing an experimental program known as Exploratory Work Experience Education (EWEE).

In its continuing support of the pioneering effort, Norair has phased 175 students through the program, including nine presently involved.

Primary objective of EWEE is to provide high school students an opportunity to gain practical experience in industry as a part of their educational process.

Currently, six major industrial firms in addition to Northrop are taking part in what is now regarded as a highly successful project. The six firms are: Western Electric, McDonnell Douglas, IBM Corporation, Litton Industries, Pacific Telephone and AiResearch Corporation.

Dorsey, Manual Arts and Washington high schools send students to Norair on a rotating basis. At present, students from Washington are in the midst of a 10-week training period at Norair.

Those taking part are assigned to various work areas. Girls, for example, work in such functions as the Engineering Library, Mailroom and Personnel, while the boys work primarily in electrical and mechanical assembly operations.

Students spend two hours a day for two weeks in each department before being reassigned to another department to broaden their perspective of the total business environment.

While students are not paid for their work, they do receive grade points required for graduation. Each student is graded on his or her attendance, work habits, cooperation, appearance and attitude while in each assigned Norair work area.

Softball, Slo-Pitch Teams Forming

Softball season is here again, and NRC is offering action to suit any taste through teams now in practice that will launch league action in May.

Approximately eight teams are set to enter regulation softball leagues in the South Bay area under the NRC banner. Many need players, especially pitchers.

And for those who like slower action, there are Slo-Pitch leagues, one on Tuesday with a 12-inch ball, another on Wednesday with a 16-inch ball.

Contact Personnel Activities for information.

Mountaineers Set Weekend Hikes, Camping Trips

Northrop Recreation Club members, through their affiliation with the Northrop Mountaineers, may participate in any or all activities of the Sierra Club.

For example, three events are planned for the next three weekends. Contact the group leader for information.

On Saturday and Sunday, a car camp at the Calico Diggings, east of Barstow near Yermo, is planned, either as a one-day or campout. Mike Clodt, 714-892-9160, is the leader.

On April 20-21, a car camp and peak climb in the Cuyamaca Rancho State Park is set. Bruce Collier, 436-9211, is the leader.

On April 21, a Sunday local hike is planned off the Angeles Crest Highway. Kay Thomas, 664-7552, is the leader. A second Sunday hike will be held April 27 at Saddleback Buttes. Contact Wally Henry, 805-944-1632.

Ice Show Seats on Sale

Bargain-rate tickets are still available at Northrop outlets for the 5 p.m. May 5 performance of Ice Capades at Los Angeles Sports Arena. Regular $5 reserved seats are available for $3.50.

NRC Summer Bowling League Forms Available

Entry forms for NRC-sponsored summer bowling leagues which begin rolling the first two weeks in May at South Bay locations are available through Personnel Activities and league secretaries.

All leagues roll at 6:30 p.m.

Scheduled for Monday nights is a Mixed Four Scratch (625) league at Tropicana. On Tuesdays a Men's Trio Scratch (525) meets at Missile, and a Low-Average/Beginners Mixed Four Handicap (550) competes at Tropicana. A Mixed Four Handicap (635) is set for Missile Bowl on Wednesdays. Thursday night offers three possibilities: a Mixed Four Handicap (625) at Missile; a Low Average / Beginners Four Handicap (550) at Del Mar; and a Mixed Trio (515) Peterson Point at Gardena.

Norair's Wilhem Honored

Northrop Norair's David Wilhem has been elected to the main committee of Committee E-24 on Fracture Testing of Metals, American Society for Testing and Materials.

Mr. Wilhem is a senior engineer in Research and Technology's Structures and Dynamics organization.

Bond Drive Participation Urged

The 1968 payroll savings campaign for U.S. Savings Bonds has begun throughout the United States with a national goal of signing up two million Americans as new savers or for increased payroll savings.

Northrop President Thomas V. Jones said this week he has pledged Northrop's complete support for the Savings Bond campaign to the national aerospace chairman, J. L. Atwood, president of North American Rockwell Corporation.

"A great number of our people are already subscribing to savings bonds," Mr. Jones said. "I hope they will find it possible to increase their subscriptions, and, of course, if we are to make a good showing it is most important that those who are not now in the program sign their pledge cards as new subscribers."

Facilities coordinators of this year's campaign are Ken Terry, Harry Belcher and Harry Clark of Nortronics; Dick Carroll of Norair; John Via of Ventura; Deane Haddon of Northrop Corporate Laboratories; and Bob Weiss of the Corporate offices.

As in the past, line supervisors will be the focal point of the campaign and will personally contact employees under their supervision. Signup cards will be available in all departments.

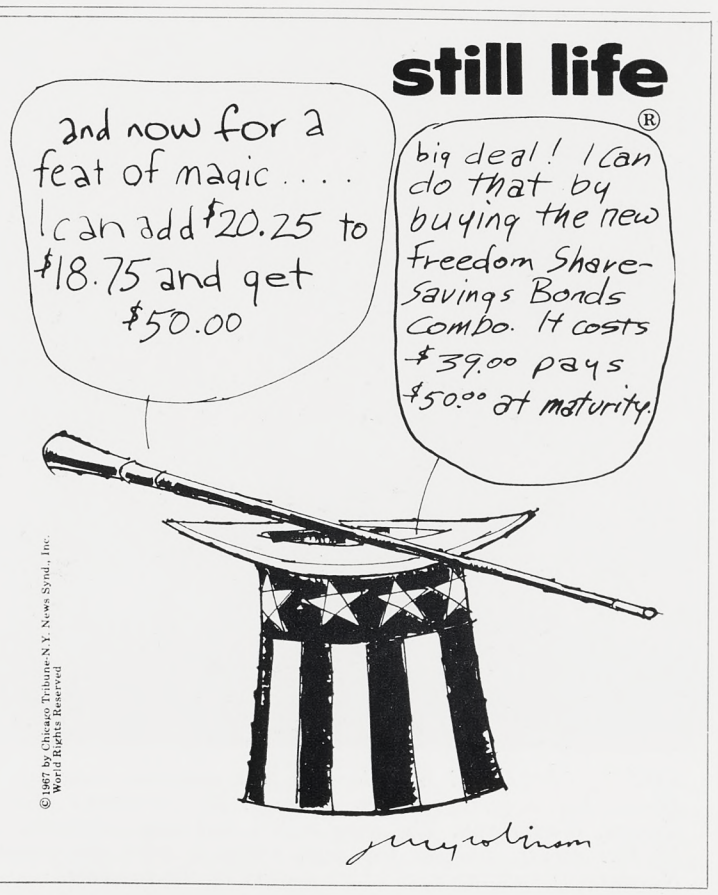
Following are excerpts from President Johnson's message to the 1968 national committee, headed by William P. Gwinn, president of United Aircraft Corporation:

"Our unparalleled prosperity can be sustained and extended by common effort. We can each enlarge our own prosperity, and invest wisely in the future, by buying U. S. Savings Bonds and Freedom Shares.

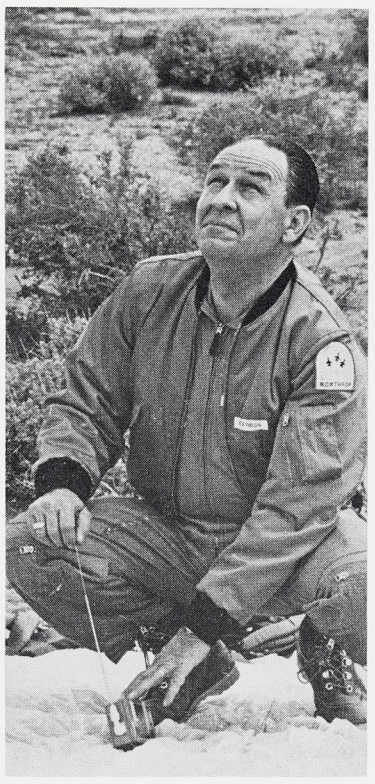
"With a few dollars, we can help safeguard all our salaries and savings from inflation. We can keep the American dollar strong when all the world looks to its strength for security.

"We may also see each bond we buy as a bulwark of our freedom. Our sons in Vietnam purchase them in that spirit. We can do no less than support our fighting men with matching contributions to the cause of peace.

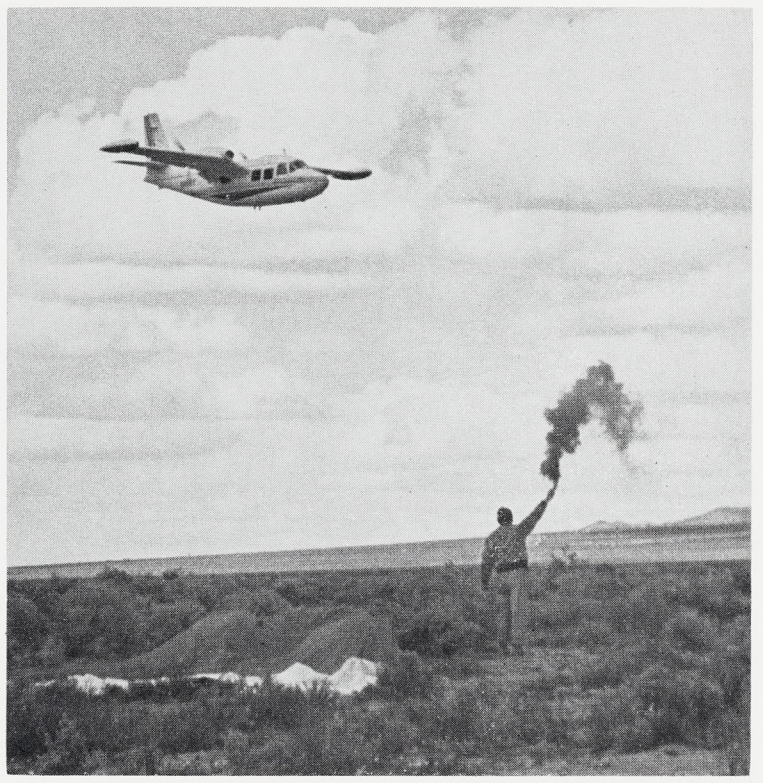
"Maximum participation is more than our goal. It is an opportunity and duty in which every American must be proud to share."



NEW DIRECTIONAL SYSTEM—Northrop's search pilot installs compact direction and signal strength meter instrument on to search airplane's instrument panel before takeoff to locate simulated downed aircraft. Left indicator guides flight direction. Right indicator shows downed aircraft's signal strength, nearness.



'LOST' IN THE DESERT—Dick Fields, a Northrop employee, prepares to activate a transmitter which sends distress signal to search airplane.



AT THE CRASH SITE—In a simulated rescue, a pilot signals with a smoke flare to a search plane. The pilot, a Northrop employee, was found with the aid of the newly developed downed aircraft locator system, a lightweight, portable unit which will fit into virtually all aircraft.

The Airborne Search Receiver—New Life for Pilots

Northrop Corporation has developed a lightweight airborne search system, about the size of a cigar box, that can easily be installed in a civilian aircraft to locate private airplanes downed in remote areas. In tests with the new receiver, Northrop pilots have consistently located simulated crash sites from distances up to 150 miles.

In actual search and rescue operations, the small, seven-pound Northrop Ultra High Frequency search system receiver will pick up distress signals emanating from a small transistorized transmitter (crash locator beacon) in the wing-tip or tail of a downed aircraft. The transmitter is designed to begin sending a continuous signal, up to a distance of 150 miles, on impact. If necessary, the transmitting device is also lightweight enough to be removed from the crashed airplane and hand-carried by a downed pilot.

The signal received by the Northrop system on the search airplane activates a left-right "finder" gauge and a signal strength indicator in the pilot's compartment. Simultaneously, an audio signal is also received by the search pilot and grows in volume as he flies toward the downed airplane. With the system, air-to-ground visibility is not mandatory for locating crash sites.

The Federal Aviation Administration recently announced that it is considering proposing legislation that would require all private pilots to carry crash locator beacons. The FAA said in its announcement that it has previously resisted such regulatory action largely because of the unavailability of a satisfactory airborne search system to receive distress signals from these portable transmitter beacons.

Pointing up the need for widespread use of civilian search and rescue systems, such as the new Northrop device, the FAA reports that since 1957 in nine western states, 35 private airplanes carrying 66 people have disappeared without a trace. Nationally, in 1965 alone, the latest year for which statistics are available, there were 299 fatalities resulting from 119 civilian aircraft crashes. Twenty-seven of these airplanes have never been found.

The Northrop search system can be used by most of the smallest private airplanes. The company's own aircraft are fitted with the new receiving and search equipment, which has been refined by company engineers over a period of about nine years to achieve a portable, reduced-size package compact enough to stow behind the pilot's seat when not in use.

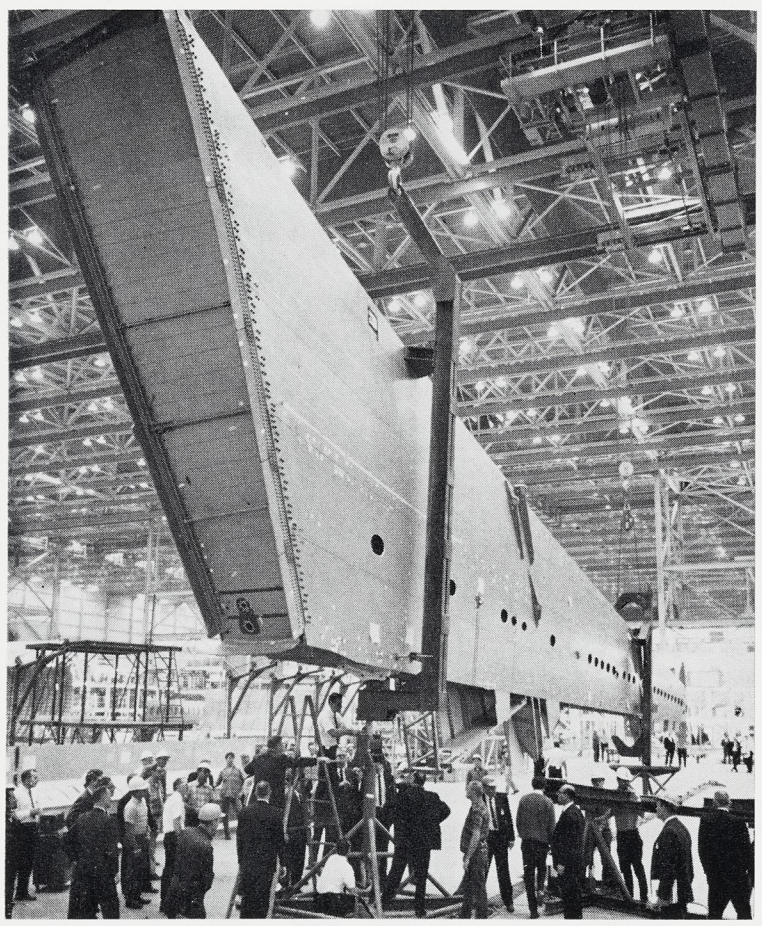
Northrop began development of its airborne search system several years ago when one of the company's pilots, fatally injured, could not be found until nine days after his plane crashed. There was no crash locator beacon on his airplane nor receiving equipment available for the search aircraft.

As a result of that accident, Max Stanley, Norair chief of Flight Operations, began the development of the new airborne search receiver recently perfected by Northrop.

It is foreseen that the new Northrop receiving equipment could be installed permanently in commercial transport aircraft to enable crews to pick up distress signals of downed aircraft and radio the location of the wreckage to the nearest airport where another receiver-equipped airplane could take off immediately to "home in" on the precise location of the crash and instigate rescue operations.

Following the much-publicized crash of the three-member Oien family in Northern California last year, it has since been determined, at least 59 scheduled airline flights daily, or a total of 2,890 commercial airliners, flew over or near, but failed to see, the wrecked airplane during the seven weeks that the mother and daughter survived the crash. The wreckage and bodies were finally found by a deer hunter only eight miles from busy U.S. Highway 299 five months after the crash. The FAA also notes that many pilots do not file a flight plan, making the search for their air-

(See SEARCH, page 5)



FIRST COMPLETE WING—The first complete wing for the Boeing 747 is removed from its jig at the company's plant in Everett, Washington. The wing is 105 feet long, approximately 30 feet across, and six feet high where it joins the fuselage. Northrop is building a 153-foot section of the fuselage.

Ticket Sales Continue For Disneyland Night

Ticket talk is a top topic throughout Northrop Corporation this week for those who do not want to be left out May 25 when Disneyland reserves all of its fabulous facilities just for Northrop families.

The price is $3.75 per person, including admission and unlimited use of all facilities, except shooting galleries, from 8 p.m. to 1 a.m.

But Northrop is limited to the number of tickets it can make available. That's why those who want to be sure are buying early at all Personnel Activities outlets.

Sports Car Club Plans Disneyland Time Rally

Here's a special feature for sports car buffs, a "Disneyland Special" offered by the Northrop Sports Car Club for 5 p.m. May 25.

That is sufficient time for entries to run a time and distance rally and wind up at Disneyland in time for NRC Night. The cost is $9 per car, which includes two tickets to the Disneyland event. Additional tickets are available.

ORIENTATION FLIGHT—Brigadier General C. W. Carson, jr. (left), chief of the Air Force's Military Air Advisory Group in Southeast Asia, talks with Northrop's Hank Waklee after completing his first F-5 flight, at Williams Air Force Base. General Carson took a total of 10 flights in the F-5 checkout course.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Mercedes Benz, 190 SL, $995. 373-1395. A

Cadillac, 1964 Fleetwood, full power, air cond., $2,100. 340-2137. A

Rambler, 1963 440 American, r/h, w/s/w, o/drive, low mileage, $650. 714-830-0418. A

Volkswagen, 1963, $925. 837-9264. A

Cadillac, 1965 convt., 35,000 mi., air, AM-FM, new tires, brakes, & shocks, $3,100. 325-9759. A

Mustang, 1965, 2+2, 34,000 miles, $1,550. 532-7095. A

Pontiac, 1937 2-dr. coupe, $225. 678-6027.

Corvair, 1961 4-dr., stick, $100. 370-7121.

Pickup Truck, 1951 Ford, 6-cyl., 3-spd., $200. 644-3429. A

Corvair, 1960, $350. 372-8019. A

Shelby GT, 1967 500, p/s, p/b, auto., 428 cu. in., LeMans eng., $3,900. 675-1365. A

Camper Van, 1967 Chev., 50 lb. icebox, sink, V-8, hvy. duty equipped, $2,900. 672-4231.

Volkswagen, 1959, convt., r/h, $400. 393-7464. A

Station Wagon, 1965 Sunbeam, 4-spd., $400. 676-5194. A

Cadillac, 1964 sedan DeVille, 6-way p/seats, full power, fact. air cond., AM-FM radio, $2,100. 377-8837. A

Ford, 1938 w/'62 Chev. eng., 283 4-barrel, solid lifters, cam, 3-spd. Ford trans., $300. 328-2287. A

Falcon Futura, 1965 2-dr., V-8, stick shift, 20,000 miles on eng., $1,200. 378-1771. A

Karmann Ghia, 1967 4-dr., air cond., r/h, 6,500 miles, $23,000. 676-7661. A

Karmann Ghia, 1962, $650. 375-9974. A

Dodge, 1966 Coronet 500, 2-dr. h/top, fully equipped, Dunlop SP-41 radials, $2,350. 456-2690. A

Ford, 1940, new paint, chrome whls., orig. eng., floor stick shift, good tires, $500. 869-5319. A

Station Wagon, Plymouth, 1960, 7,000 miles since eng. & auto. trans. reblt., p/s, p/b, $235. 328-7906. A

Mercury, 1962 Meteor, 2-dr., stick shift, 45,000 miles, $750. 534-9545. A

Plymouth, 1966 Formula S Barracuda, p/s, p/b, air, auto. torque, recently repainted, $2,000. 676-3930. A

Buick, 1960 Electra, 4-dr. h/top, full power, $275. 714-838-3040. A

MGA, 1961 Roadmaster, 1600 series, wire wheels, reblt. eng., new paint, $875. 376-6415. A

Mustang, 1966, 2+2, 4-spd., many extras, $2,395. 377-7670. A

Thunderbird, 1967, all extras inc. a/c, AM-FM radio, new tires, $3,300. 451-2655. A

Mustang, 1966 h/top, 6-cyl., 200 cu. in., auto. trans., r/h, $1,850. 714-847-3249. A

Ford, Galaxie 500, 1966, 2-dr., b/seats, air, p/s, p/b, r/h, $1,975. 349-4772. A

Dodge, 1965 Polara, V-8, auto., 4-dr., r/h, $650. 377-6352. A

Chevrolet, 1955 2-dr., auto. trans., $350. 831-2878. A

Electric Car, Autoette, needs new batteries, $400. 325-7154. A

Ford, 1965 w/10' Kamp King camper, fully self-contained, many extras, $4,100. 326-1178.

Dodge, 1963 Polara, 2-dr. h/top, p/s, p/b, r/h, $800. 532-5114. A

Chevrolet, 1963 Bel Air, 4-dr. sedan, auto. trans., p/s, w/w tires, new radiator, $850. 473-3168. A

Cadillac, 1957 Eldorado DeVille, padded top, full power, air, 36,000 miles, $400. 541-1321.

Corvair Monza, 1962 coupe, 4-spd., $400. 645-0589. A

Chevrolet, 1957, 4-dr., reblt. 283 eng., new seat covers, $400. 372-2793. A

Corvair, 1962, $325. 454-9797. A

Station Wagon, Rambler Ambassador, V-8, p/s, p/b, p/w, r/h, $350. 769-3345. A

Hillman, 1959 Minx, 4-dr., may need ignition switch, $150. 635-5039. A

Triumph, 1961, TR-3, $695. 342-2346. A

MG 1100, 1963, reblt. eng. & trans., $300. 714-962-5325. A

T-Bird, 1964 Landau, air, $1,895. 375-0361. A

Buick, 1965 Riviera, air cond., p/b, p/s, $2,000. 831-1375. A

MG Midget, 1962, 38,000 miles, r/h, soft top, tonneau cover, $700. 325-1190. A

MG Midget, 1964, low mileage, wire whls., heater, $800. 322-7869. A

Household Items For Sale

Crib, walnut, $30. 835-3869. B

Washing Machine, Kenmore, $25. 370-4475.

Table, 32x32, glasstop, wrought iron, 4 chairs, leaf pattern, $45. 393-2373. B

Sewing Machine, elec. portable, $35. 324-1237. B

Crib, mattress, 6 yrs. old, $10. 376-8014. B

Washing Machine, front-loading, $20. 320-3440. B

Refrigerator, lge., 3 yrs. old, $100. 370-4148.

Youth Bed, modern, girl's, w/box springs & mattress, $20. 323-6745. B

Dinette Set, 7-pc., deluxe, chrome, Virtue Bros., $65. 677-5474. B

Range, Gaffers & Sattler, auto., gas, copper-tone, chrome top, dble. oven, rotisserie, $170. 714-827-3217. B

Beds, twin size, box spring & mattress, $20. 372-3827. B

Miscellaneous For Sale

Cemetery Lot, Park View, Inglewood, $550. 753-7484. C

Motorcycle, 1962 Tohatsu, 50 cc, stripped for dirt, $65. 676-5262. C

Home, 4-bdrm., all-elec. kitchen, o/sized service porch, sprinklers, ½ mile to schools & shopping, $45,500. 377-6426. C

TV, Zenith 23", b&w, console, walnut, wireless remote control, $100. 582-1079. C

Motorcycle, 1964 Triumph Cub, 200 cc, 4-spd., $350. 324-8960. C

Piano, remodeled, upright, $125. 714-635-5304. C

Watch, Rolex, new band, waterproof, $39. 596-0521. C

TV, Packard Bell console, 21", blonde, $25. 534-2419. C

Speed Boat, 14' Merline, Mercury Mark 55 outbd. motor, trailer, complete w/controls, windshield, $595. 425-0581. C

Condominium Apt, 2-bdrm. & den, 2 baths, pool, rec. room, 5 min. to Nortronics, $35,950. 377-7460. C

Boat, 1951 Owens, 34', twin engs., 6 cyl. Palmers, flying bridge, S.S. radio, sleeps 5, $9,000. 867-1476. C

Bicycle, Schwinn Sting Ray, $20. 883-0093.

Camera, Leica, 50, 90 & 135 mm lenses, $99. 379-4075. C

Piano, full keyboard, $200. 675-7729. C

Bicycle, girl's standard 24", $10. 328-3306.

House, 3-bdrm., in Lawndale, extra bldg. in rear, 8'x30', 10 min. from Norair Hawthorne, $19,950. 370-7742. C

Boat, 15', fiberglass hull, 45 h.p. outbd. elec. start, auto. bailing, eng. o/hauled, many extras, trailer, $750. 371-3753. C

House, 3-bdrm., 2 baths, cpts., dps., fenced yard, dble. gar., 10 min. to Norair, $24,500. 327-6849. C

Outboard Motor, Homelite, 55 h.p., 2 props, tack, controls, low time, $700. 805-947-6453.

Apt Units, 2, in Inglewood, terms, $25,500. 673-4475, 292-8053. C

Dirt Bike, Yamaha, 1965, 80 cc, expansion chamber, Honda front end, $250. 376-3525.

Auto Cooler, 6 volt, plug in at cigarette lighter, $20. 833-2512. C

Guitar, Kamai, classic, $55. 676-5291. C

Tent, 11'x11', orange color, outside poles, shade o/door, 3 windows, $50. 370-1054. C

Rings, engagement & wedding, ¾ carat total weight, set in white gold, $200. 322-5930. C

Stereo, Zenith portable, det. speakers, stand, $35. 644-1958. C

Honda 90, C200, $135. 831-4586. C

Trailer, Pacemaker, 28', $600. 329-7218. C

Stereo, Grundig-Majestic, record player, tape deck, & recorder, $500. 677-3260. C

Building Lot, o/looking Lake Elizabeth, on paved street, electricity, water, 10% dn., $4,150. 947-8389. C

Dog, collie, male, 3 yrs. old, AKC, papers, sable & tri, $125. 714-524-0889. C

Ham Transmitter, Eico 720 & crystals; VFO, Eico 723, $70. 867-0662. C

Surfboard, 9' custom Jacobs, $40. 372-1681.

Air Conditioner, General Electric Thinline compressor-type w/G.E. steel porta-cart, 7,500 btu, $100. 714-528-7636. C

Piano, baby grand, Emerson, mahogany finish, bench inc., $550. 375-8778. C

Pups, fox terrier, part toy, 2 females, 1 male, $10 ea. 374-5133. C

Sailboat, 11', all extras, $375. 325-4094. C

Lot, lake view, new boat slip, Bass Lake, on quiet, secluded cove, level lot, nice timber, $750 dn., $50 mo., $3,500. Box 701. C

Camera, 35 mm Leica III f., Nikkor 1.4 lens, speeds to 1/1000 sec., self-timer, flash gun, filter, case, $115. 714-626-1597.

Acreage, in Lancaster, 2½ acres of farmland, $1,500 dn., $50 mo. inc. 6% interest, $5,500. 375-7130. C

Honda 250, dirt bike, reblt., knobbie tire, $250. 363-3843. C

Motorcycle, 1966 Yamaha, 250 cc scrambler, all custom, all chrome, many extras, $350. 371-5261. C

Reducing Machine, Stauffer, $45. 324-8618. C

Lot, 9/10-acre, Lake Los Angeles, take over $44 mo. paymts., $2,000. 672-4450. C

Lot, 82½' x 330', near Lake Isabella, level, water, electricity, $100 dn., $30 mo., $2,750. 714-532-1361. C

Yamaha 60, 1966, $150. 370-5316. C

Varityper-DSJ, 8 type fonts, inc. math & script, supplies, $275. 479-1432. C

Acreage, improved 1 acre, at Lake Los Angeles, $5,290. 805-526-7767. C

Miscellaneous For Sale

Pups, basset tri-colored males, AKC, wormed & shots, $75. 830-3816. C

Boat, 14' Cataraman, 2 35 h.p. Mercury, elec. start, trailer & tarp, $750. 675-3254.

Wedding Gown, size 8, bouffant lace, long sleeves & train, $55. 714-527-3451. C

Tires, 2 13x6, 4-ply, $6. 672-2370. C

Building Site, ½ acre in Agoura, gentle slope, horses o.k., water, electricity & phone, $8,500. 783-8271. C

Motorcycle, Triumph, 1955, 650 cc, lots of chrome, $600. 675-1821. C

Engine, 289 & auto. trans., for 1967 Ford, $450. 635-2826. C

Saw, radial arm, DeWalt, stand, circuit breaker, adjustable blade, 220 volts, $50. 714-962-5493. C

Ski Boat, 16' Tahiti, Schuster, 1967, 110 h.p. Merc. motor, take over $73 mo. pymts., $1,960 bal. 631-4312. C

Camera, 35 mm, German Edixa reflex w/135 mm focal length lens & carrying case, $55. 323-8797. C

Acreage, 5 acres in Antelope Valley near Willow Springs, $35 dn., $35 mo. inc. 6% interest, $3,500. 378-1026. C

Sloop, 19', mahogany, sleeps 4, $500. 675-3578 before 8 a.m. C

Lathe, wood-type, 8-spd., stand, accessories, $75. 944-5946. C

Home, 2-bdrm., new roofing, paint in & out, h/wood floors, 15 min. from Northrop, $19,950. 754-3554. C

Golf Clubs, 1, 2, 3, 4 Wilson X31 woods, 2-9 McGregor tourney irons, bag boy cart & Wilson compartment bag, $150. 346-7830. C

House, 2-bdrm., near El Camino, avail. Aug. 1, $21,500. 329-4576. C

Guitar, Fender deluxe, $250. 326-6195. C

Slip Lot, Salton Sea, lot for house & sep. boat dock on channel, roads & utilities in, south side of sea, pvt. party, near yacht club, $7,100. 714-535-1694. C

Lots, 2, Oakwood Cemetery, on hillside, Chatsworth, $305 ea. 343-7880. C

Window, aluminum, 10x3 ft. oxo w/screens, $15. 377-2816. C

Boat, 12' British Avon inflatable-type, nylon & hapalon material, 4 air chambers, high pressure tubes, other access., $350. 379-3487. C

Corner Lot, in Thousand Palms, 90.03 long, 47.53 wide, 6½ miles from Palm Springs, $2,400. 675-6103. C

Radio, for auto, Motorola, 12 volt, transistor-powered, enc. speaker, under-dash model, $10. 375-7038. C

Racing Tires, 2 Firestone Super Sport Indys, size 8:10x15, fit VW stock rims, $60. 329-4837. C

Motorcycle, Honda, 150, $250. 325-3724. C

Honda, 160 cc, 1965, 4-spd., recently reblt. eng., new carbs, $400. 378-0603. C

Typewriter, Royal portable, manual, 12" carriage, elite type, $90. 429-7514. C

Pool Table, 7', slate, new top, $350. 323-2502. C

Drum Set, pearl, 4-pc. w/Ludwig access., $90. 371-8907. C

Wanted to Buy

File Cabinet, 2 or 3 drwr., legal size. 671-1012. D

Lapidary Equipment, good, used. 377-8817.

Mobile Home, must be 2-bdrm., 12' to 20' wide. 376-3384. D

Tires, 4, size 4.40x12. 327-4585. D

Speaker for antique Atwater Kent radio, Model 42. Must be in operating condition. 379-0971. D

Metal Locator, transmitter/receiver, single head type. 677-3920. D

Air Compressor, with or without motor for car painting application. 370-7092. D

Washing Machine, in working order & power mower, reasonably priced. 644-2607. D

Encyclopedia Britannica, 1961 or later, including yearbooks. 714-892-5801. D

Tape Recorder, reel-type, 4-track, stereo. 329-1705. D

Trailer for 17' ski boat. 374-3702. D

Dryer, gas, preferably Kenmore. 328-7048. D

Dance Records, 45 r.p.m., in good condition. 752-7995. D

Playpen, mesh, in good condition. 756-3782.

For Trade

House Trailer, 1960 Nashau, 10'x50', furn. w/extra freezer, washer & dryer, air cond., trade for chassis mount for late model truck-camper, o/head preferred. 677-6712. E

Free (To Be Given Away)

Dog, male beagle. 644-2717. F

Rentals Offered

Apt, 2-bdrm., 2 baths, upper, adults, no pets, cpts., dps., bltins, pvt. patio, carport, $140. 676-9492. G

Vacation Cabins, Lake Gregory & Crestline, sleep 6, make reservations for June through Sept., $25 w/ends; $60 wk. 391-2040. G

Home, on North Shore, Lake Arrowhead, 3-bdrm., rumpus room, 2 baths, 2 families OK, $24 night; $34 w/end; $150 wk. 476-1842. G

Cabin, Green Valley Lake, $25 w/end; $45 wk. 324-0649. G

Apt, deluxe 2-bdrm., furn., lge. pool & patio, closed gar., near El Camino, adults, $165. 329-5986. G

Rentals Offered

Studio Apts., 2 & 3 bdrm., under const., ready by June 1, cpts., dps., all elec., pvt. patios, many extras, no pets or children under 12, $165-$275. 326-4944. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 320-2002. G

Cabin, Lake Arrowhead, modern, 200 feet from lake, $100 wk. 375-2255. G

Apt, 1-bdrm., near King Harbor, cpts., dps., bltins, piped music, bltin vacuum, gar. w/storage cabinets, $120. 372-8835. G

Rentals Wanted

Apt, 1-bdrm. or house, furn., must be within walking distance of Plant I. 679-1206. H

Child Care

Child Care offered, 1 child, my home, licensed, hot lunches, fenced yard, reasonable. 676-1036. I

Child Care offered, a hot lunch, vicinity Lincoln & Manchester. 670-0372. I

Personals

I wish to express my appreciation & thanks to all my friends for the wonderful gifts, cards & phone calls, during my illness. ESTHER LE DOUX. L

Gratefully acknowledging & thanking all of you for your kind expressions of sympathy in the passing of my mother. AL TUCKER. L

I want to thank my friends at Northrop for the cards & messages of good will during my recent illness. BOB ZUTAVERN. L

Please accept our sincere thanks & appreciation for the cards, flowers & expressions of sympathy in the loss of our husband & father, Charlie Bearden. JUANITA BEARDEN & SON, CHUCK. L

Sincere thanks to all my friends at Norair for the kindness extended to me during my recent illness & convalescence. The flowers, cards & calls were greatly appreciated. TOM RYAN. L

Young Man wanted to cut & water lawn weekly, Norair Hawthorne vicinity. 676-8817.

For Sale or Trade

Renault, 1962, sporster wagon, 4-dr., new clutch, $225 or trade for ¾-1½ ton truck. 631-8333. M

Refrigerator, Servel, 2½ yrs. old, $39, or trade for TV, portable. 644-6198. M

Machinist's Tools, Starrett, $250 or trade for motorcycles, guns, mechanics tools, cameras, musical instruments of equal value. 866-2079. M

Home, stucco, in Inglewood, 3-bdrm., 2 baths, den, cpts., h/wood flrs., 2-car det. gar., patio, b/wall fence, $9,000 equity, $26,000 or trade for land or home in Malibu Canyon or Thousand Oaks area. 671-8401. M

SEARCH

(Continued from page 4)

plane, if it is forced down, exceedingly difficult since such survivors cannot transmit their positions, and the route of their flight and destination are unknown.

Other predicted applications of the search system may include finding and rescuing lost boaters, stranded skiers or mountain climbers, and tracking criminals by teams of air and ground law enforcement agencies.

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Hawthorne Blvd. & 132nd St., Hawthorne. Patricia Maddox, Norair ext. 5134, 676-9858.

7:30 a.m. — 4:15 p.m.

Hawthorne Blvd. or Grevillea & 140th, Inglewood. Irene McCarthy, Norair ext. 1581, 672-7506.

Rosecrans & Garfield or Imperial & Garfield, Holly Dale. Fred J. Giusti, Norair ext. 1584, 633-2395.

SLOAN

(Continued from page 2)

gineer; and George C. Grogan, jr., vice president of Engineering for the Ventura Division.

Mr. Harnett, who came to Northrop in 1964 from the Logistics Management Institute, is now in the process of completing a nine-week Program For Senior Executives at M.I.T.

Stanford Program

Mr. Gasich graduated from the nine-month Stanford Sloan Program in 1967 and was named general manager of the Ventura Division in July that year. Since joining Northrop in 1953, Mr. Gasich had progressed through levels of management and had been vice president, Technical, at the Norair Division since 1961 before his assignment to the Stanford-Sloan program.

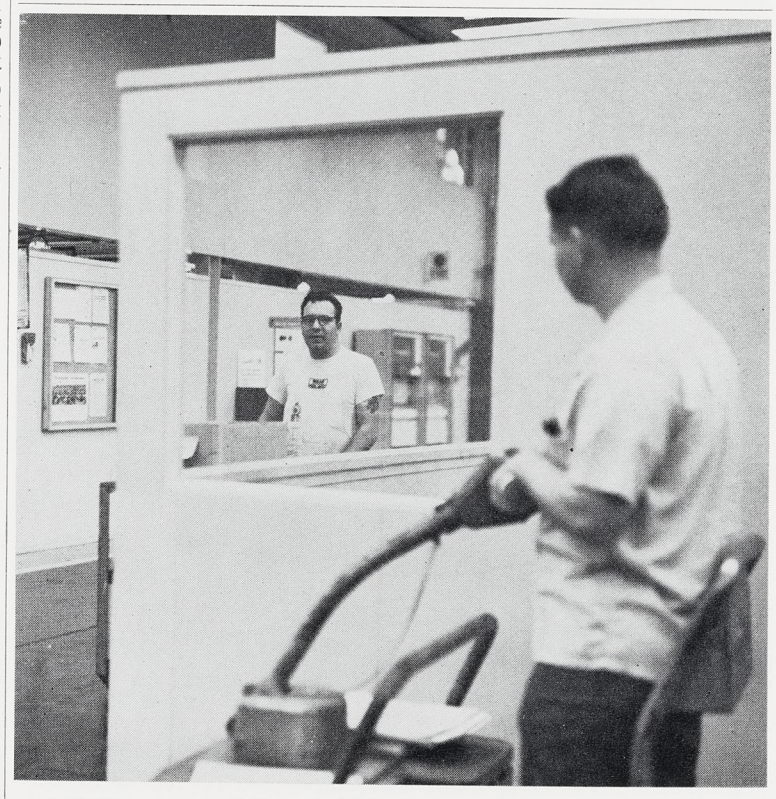
Mr. Jennings, who is in the Applied Mechanics group of the Advance Technology section at Ventura, was assigned to the Stanford-Sloan program in September 1967 and will complete the advanced management training in June.

M.I.T. Course

Mr. Grogan completed the nine-week program for senior executives at M.I.T. in 1967. He joined Northrop in 1959 and was assistant manager of the Norair Marketing department before assignment as Ventura's vice president of Engineering in May 1965.

Walter A. Byers, regional director-Europe for Northrop International, has been accepted for attendance at the Stanford-European Institute of Business Administration Program to be conducted at Fontainebleau, France, in June and July.

The 1968 Stanford - INSEAD Advanced Management Program is first in a series of joint annual programs to develop European and North American executives for top management positions.



SAFETY WINDOW — Les Grahorn, a member of the Safety Committee at Northrop Norair, is framed in a new safety view window along a main aisle in Plant One. Mr. Grahorn suggested the installation of the window to eliminate a dangerous blind corner. Committee members submit more than a dozen safety suggestions each month. Mr. Grahorn is a machinist.

Sixth Patent Awarded To PPD's Pittman

The name of Roland Pittman, a product manager at Nortronics' Precision Products Department, is a familiar one at the United States Patent Office.

Mr. Pittman recently received his sixth patent from the government, this one for a rate sensor —a gyroscopic instrument for sensing the rate of angular displacement of a moving body.

The sensor, called a dual-axis rate transducer (DART), is made up of very few parts and only one meeting of moving parts. According to PPD officials, it has a wide dynamic range and broad frequency response, and can withstand rugged inertial environments.

The rate sensor, the result of six years of research and development by Mr. Pittman, demonstrated high performance suitable for a number of aerospace control and stabilization applications.

With a small structural attachment, the basic rate sensor can be made to sense acceleration, giving it still another capability.

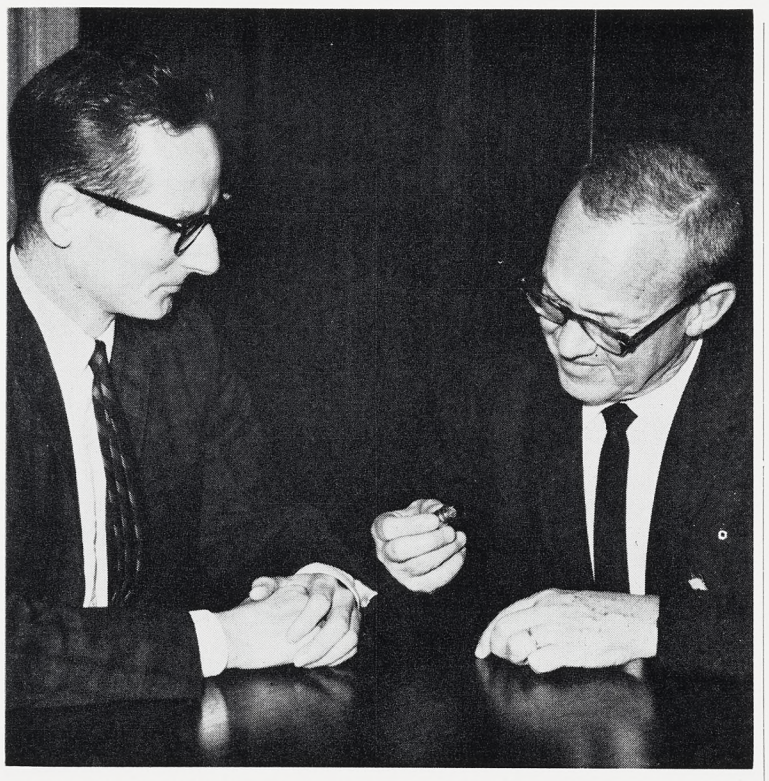
In concept, the sensor takes advantage of the inertial reaction of a fluid (mercury) which is rotating at a high velocity. The mercury is contained within a spherical chamber, supported by a spin axis bearing system and driven by a two-phase motor. Within the spherical chamber are two crystal sensoring rods, arranged in tandem. When an aircraft or missile changes direction, the mercury activates the sensoring rods. They, in turn, transmit signals through wires.

Officials said that because of the rate sensor's size and light weight—less than three ounces—extra units can be installed in one system with a second or third unit providing back-up reliability.

In addition to his patent, Mr. Pittman received a cash award and a Certificate of Award as a participant in PPD's Patent Award Plan.

Previous patents issued to Mr. Pittman include the invention of a fluid rotor sensor, a single axis two-gyro stabilized platform, a rotative device, and an all-attitude single axis gyroscope reference platform.

Mr. Pittman is product manager of the Dual Axis Rate Transducer (DART) group at PPD.



LATEST PATENT—Roland Pittman (left), a Nortronics Precision Products Department product manager, talks with Willard Graham, Corporate patent director. Mr. Pittman recently received his sixth patent; this one for the invention of a rate sensor.

Employee's Son Earns Air Medal

The 20-year-old son of a Nortronics Hawthorne employee has been presented with a presidential citation in Vietnam.

SP5 Jerry Hughes, whose mother is Virginia Hughes, an electronics assembler, has received the Air Medal at Cam Ranh Bay. The medal and citation were given to Specialist Hughes, himself a former Norair employee, for "meritorious achievement while participating in sustained aerial flight in support of combat ground forces of the Republic of Vietnam."

During the period from late August 1967 to January 1968, Specialist Hughes actively participated in more than 25 aerial missions over hostile territory. It was during these flights that, according to the presidential document, "he displayed the highest order of air discipline and acted in accordance with the best traditions of the service."

Before he entered the Army, Specialist Hughes graduated from Torrance High School in 1965, and attended El Camino College while working for Northrop. Even Specialist Hughes' father, Lee Hughes, sr., and his brother, Lee Hughes, jr., are former Norair employees.

Since receipt of the Air Medal, Specialist Hughes has been transferred from Cam Ranh Bay to Qui Nhon, where he is a crew chief in the aviation section with the Headquarters Company, 35th Engineer Group.

On his return to the United States in August, Specialist Hughes—a licensed private pilot —will serve with the Army for another year.

THE AIR MEDAL from his commanding officer and a citation from the President; that's what SP5 Jerry Hughes has received in Vietnam for his participation in more than 25 aerial missions over hostile territory. Specialist Hughes (right) worked at Norair before entering military service. His mother, Virginia Hughes, has been with Nortronics as an electronics assembler for nearly 15 years.

BOWLERS PLAN DOUBLES TOURNEY

A Scotch doubles bowling tournament has been scheduled for April 21 at the Carter Bowl in Fullerton, according to Vito DePaul, NRC Bowling Club commissioner at Anaheim.

Mr. DePaul stressed that even though the event is intended for all Northrop employees, their families and friends, entries will close at the end of the first shift on April 12.

Each of three squads will play six games, vying for trophies and cash prizes. One squad will bowl at 10:45 a.m., another at 12:30 p.m., and the third at 3 p.m.

The entry fee is $6 per couple, with registration open to couples only. Rules, regulations and entry blanks are available at the Anaheim Personnel Activities office, or from the commissioner.

NRC entrants from locations other than Anaheim will be given starting time preference due to the differential in driving time.

A registration of approximately 200 is expected over the 150 who turned out last year, largely because the leagues have doubled in size since then.

Mr. DePaul emphasizes that this will not be an ABC or WIBC sanctioned event. Therefore, no one will need a valid card from either organization.

The commissioner may be contacted on Anaheim ext. 443 for further information.

Employee Wins Television in Guessing Game

How many beans are in the jar? If you've ever tried that guessing game, you can imagine the plight of a Nortronics employee faced with pretty much the same predicament.

Only this time, the beans were shiny aluminum parts, and the jar was a four feet high plastic tube measuring 12 inches across.

Nick Semonza, a tool designer at Nortronics Anaheim, pondered a moment, wrote down his "guesstimate" on a card, dropped it in the slot, then promptly forgot about it. After all, he thought, how could anyone possibly come close enough to the exact number of aluminum parts in that tube to win the portable TV set? And, with nearly 3,000 "guessers" as competitors . . . well, Mr. Semonza decided that he'd just plan on buying that spare set for the bedroom.

Because the pieces were not counted until the tube was emptied after the guessing, nobody knew the exact number, and estimates—which ranged from 497 pieces to over two billion—were more difficult because the precision-cut edges of the pieces had mirror-like finishes.

But, 7,366 shiny aluminum pieces later, Mr. Semonza was informed that his guess of 7,366 aluminum parts was exactly correct. No one has bothered to compute the fantastic odds against such an occurrence.

The guessing contest was a feature of the tci Aluminum, Incorporated, booth at the recent Western Metal and Tool Exposition in Los Angeles.

Significant is the fact that the number—7,366—was not significant at all to Mr. Semonza. It isn't his organization number at Nortronics, his house number, or the last digits of his phone number. Nothing like that. "It's just a number that came to me," he said.

GUESSING GAME—This television set is the prize awarded to Nick Semonza (left), a tool designer at Nortronics Anaheim. He received the portable TV for guessing the correct number of aluminum parts in a container. Making the presentation is Burton Belzer, president of tci Aluminum, Incorporated, sponsor of the contest.

Systems Man Attends N.Y. Conference

A Nortronics Information Systems specialist will return to Anaheim tomorrow after attending a three-day orientation seminar of the American Management Association in New York City.

Mr. Rawlings

Richard C. Rawlings, Nortronics systems specialist, was co-chairman of the conference. He delivered before the group a paper titled, "Basic Elements of Information Storage and Retrieval Systems (IS&R)."

As a systems specialist, Mr. Rawlings has been with Northrop for two years and has most recently completed work with the Systems Engineering group concerned with the Tactical Information Processing and Interpretation (TIPI) program. Now he is engaged at Nortronics in the development of the Joint In-Flight Data Transmission System (JIFDTS) program.

Winners Named In Costa Mesa Golf Action

Results are in from the 18-hole Nortronics Hawthorne Costa Mesa Golf Tournament, and, from a field of 80, four flight winners have been decided. All scores are gross.

Dave Rice fired the hottest round of the day with the lowest score in recent play—a 71—to win the best game gross.

First flight honors went to Ed Powell for his 73, Cliff Ross' 77 bested the second flight, Gary Wycoff led flight three with a 79, and Don Caughlin had a 91 which was tops for the fourth flight.

Entries are open—at $5.50 per golfer—for the April 27 tourney at El Rivino Country Club in Riverside. Fifteen foursomes will be scheduled, with tee-off times beginning at 8 a.m.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 8 | April 24, 1968

PROGRESS AND FUTURE GOALS were outlined by Ross Miller, Nortronics vice president and Navigation department manager, as he spoke to hundreds of Hawthorne employees gathered at the trailer complex last week. "We can make our already good business better," said Mr. Miller. The manager pointed to C-5 cost reductions and the suggestion awards program as means to this end.

Miller Forecasts Business Improvement

"Business is good, but with care, we can make it even better."

So said Ross Miller, Nortronics vice president and manager of the Navigation department, speaking last week before several hundred employees at a program briefing.

Mr. Miller's remarks covered the current status of business for the Navigation department and projected a view of future trends. He noted the substantial growth of the corporation—40 per cent over a two-year period—and predicted that the department will play a major role in sustaining this corporate growth.

"This can be accomplished," said Mr. Miller, "because we are rapidly developing a larger product base and a larger customer base than ever before."

The manager told the employees that one method of improving Navigation department business is for everyone to make an effort to reduce costs. He referred specifically to the C-5 cost reduction program, and encouraged individuals to submit ideas for better economy through the suggestion award program.

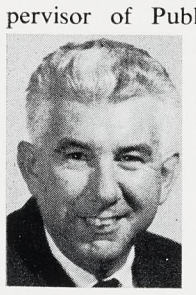
Mr. Miller emphasized the importance of gaining new customers and maintaining quality in satisfaction of those contracts already in-house. He reminded employees to "not forget that if our business is to survive and continue to grow, it must be profitable—that's the name of the game."

ANAHEIM'S FRANK ANTON

'There's Bismuth in Them Thar Hills'

As an old sourdough might tell you, there are still riches to be found in the hills of California. One Nortronics man who agrees has revived for himself and his wife the lost art of prospecting.

He's Frank Anton, general supervisor of Publication Services at Anaheim, who may yet find that vein that could lead to the mother lode.



Mr. Anton

For Mr. Anton and his wife, Ann, the thrill is in the seeking. For this reason, they've never had an unsuccessful exploration, even though they have never struck it rich.

Mr. Anton, a Nortronics employee for eight years, and Mrs. Anton, a microbiologist with the Orange County Health Department, have been partners in prospecting and marriage for 12 years. They are not now—nor have they ever been—necessarily looking for gold. There is a substance known as bismuth, usually recovered as a byproduct of silver. The Antons would settle for that. Especially since there are no known bismuth lodes in California, and since the presence of bismuth indicates a proximity to silver. Bismuth, alone, has a value of more than $4 per pound. It is most commonly known as a pharmaceutical ingredient in a patent medicine that helps "soothe an upset stomach." Because of its low melting point, bismuth is also the substance used to manufacture the seals on the automatic sprinkler heads installed in ceilings.

In their decade or so of trudging the tricky terrain and seldom traveled trails, the Antons have most recently explored the Providence Mountains in the desert near Barstow, and the dark brown, barren, Chocolate Mountains just east of the Salton Sea.

Before the month is out, Mr. and Mrs. Anton will revisit the Anza-Borrego desert. They will resume their search in the general area where erstwhile prospector "Pegleg" Smith discovered three black buttes which held a now-lost gold deposit.

Except for the time a fellow prospector drank the water supply during the first few hours out, they have never had to call off a trip.

Mr. Anton's only secrets concerning his avocation are that he drinks about a gallon of water in the hours before leaving, he never explores farther than a half-day from his truck, and he carries canned tomatoes—which are 90 per cent water. Otherwise, common sense is his chief guideline in the desert.

Their one "near miss" came in the mid '50s when a titanium discovery was assayed at 5 per cent . . . but was found prohibitive to process.

Mr. and Mrs. Anton actually spend little vacation time at their home in Garden Grove. When they are not exploring the desert hills and mountains, they manage to work in a cruise on their 20-foot sailboat.

Voice Warning System Designed for F-104G

An airborne voice warning and status reporting system for the German F-104G which will increase flight safety and operational readiness for the supersonic fighter has been designed by Northrop Corporation.

The equipment is designated the Integrated Status Reporting System (ISRS), and includes Northrop's continuous in-flight recording system augmented by the company's voice warning system. Under the contract from Entwicklungsring Sud GMBH, Munich, West Germany, prime contractor to the German Ministry of Defense for the F-104G weapons system management, the ISRS will be adapted to the F-104G by Northrop Nortronics.

Mr. Vogel

The Nortronics Systems Engineering effort, under the supervision of D. A. Moore, has brought about a fundamental achievement: through integration of subsystems, which would normally function independently, the ISRS can maintain the capability for many functions. This is possible because Nortronics has applied advanced state-of-the-art microelectronics in combination with miniature audio reproducing and recording equipment to comprise the ISRS system.

According to A. R. Vogel, chief of the Systems Status Monitoring group at Palos Verdes, "The small weight and volume goals established several years ago at the outset of the hardware development, are being achieved in the packaging and adaptation to the stringent space requirements of the F-104 aircraft. It is felt that the ISRS configuration is a significant step forward in systems status monitoring, data recording and presentation technology."

ISRS will be installed on the F-104G by Entwicklungsring and Northrop and undergo initial flight test evaluation in Germany during the early part of the multiphase program to permit the Ministry of Defense to determine whether to equip all German F-104G's with ISRS systems.

Merrell Sinks Hole-in-One In Anaheim Play

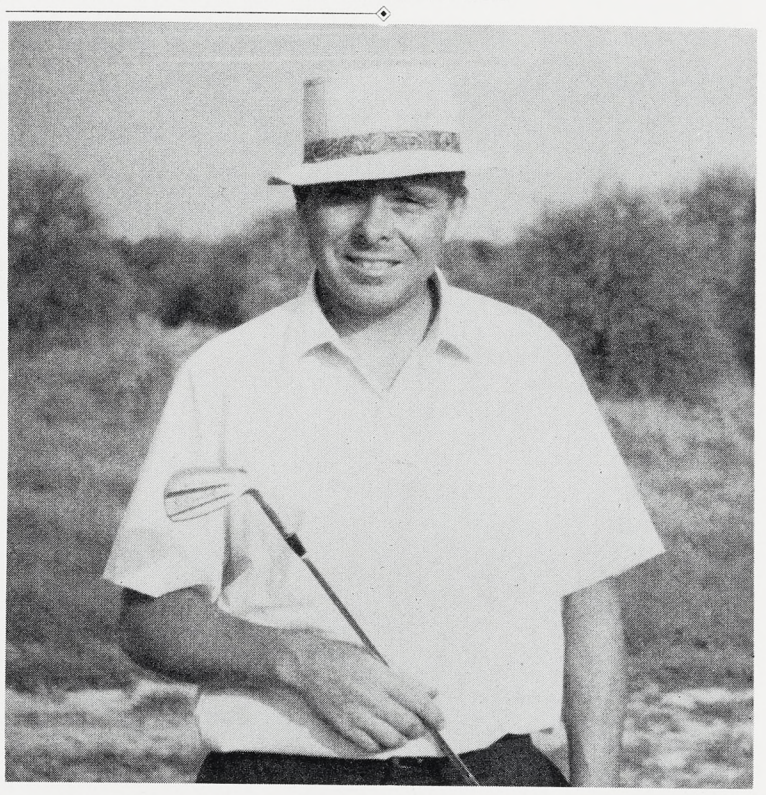
A hole-in-one, that impossible dream of any golfer, has been realized by a Nortronics supervisor.

Frank Merrell, supervisor of Plant Engineering at Anaheim's Page Court, drew a nine iron from his bag in a recent weekend foursome, lofted his tee shot onto the front edge of the green and, "watched in amazement" as his ball took one hop and dribbled into the cup.

It happened on the 125-yard 13th hole at the Anaheim Municipal Course. Attesting were Dave Hammond, Tom Kew and George Matter, all of Nortronics Anaheim.

A hole-in-one is something he had never before experienced, and he won't bet it'll ever happen again. But, for now, Mr. Merrell can bask in whatever pleasures attend a member of that exclusive society of hole-in-one golfers.

In other Anaheim golf notes, plans are complete for the NRC tourney set for this Saturday at the Massacre Canyon Golf Resort at Gilman Hot Springs. Tee off is at 10 a.m.



A HOLE-IN-ONE—the first ever fired by Frank Merrell, supervisor of Plant Engineering at Anaheim's Page Court Facility—was carded recently on the 125-yard 13th hole at the Anaheim Municipal Golf Course. Mr. Merrell will receive special recognition from Golf Digest Magazine.

FIRST DROP

Apollo Landing System Successful

The uprated earth landing system (ELS) for Project Apollo spacecraft was a complete success in its first test with a full scale boilerplate test vehicle on the same day that the first generation ELS was floating to an Atlantic Ocean landing with Apollo 6.

The boilerplate drop test at the Naval Air Facility, El Centro, followed a series of tests since last summer with instrumented test vehicles. Modifications to the Northrop-developed earth landing system were required to handle the increased weight of the Apollo command module.

Meanwhile, Saturn V/Apollo 6 was thundering to a successful unmanned mission. Although an alternate mission was selected because of Saturn V launch vehicle problems, NASA engineers reported that spacecraft accomplishments were impressive.

While evaluation of the third mission of unmanned Apollo spacecraft and Saturn V launch vehicle together will continue for several weeks, indications are that several planned system tests were accomplished. These included the service propulsion system, guidance and navigation system, reaction control system, spacecraft heat protection, fuel cells, and the new unified crew hatch and seals.

And, of course, the Northrop earth landing system unfurled within view of ocean recovery forces. All drogue and pilot parachute mortars and main parachute disconnects were observed, NASA said. The main parachutes were sighted in the water but sank before they could be recovered.

While NASA continues to evaluate the accomplishments of Apollo 6, Northrop Ventura will be continuing qualification tests of the modified ELS at El Centro. Six more boilerplate drops are scheduled.

The first manned orbital flight of Apollo involving the modified ELS is presently scheduled by NASA next fall.

The uprated landing system has been in engineering and testing at Northrop Ventura for less than a year. Principal modifications are an increase in size of drogue parachutes and the introduction of two-stage reefing of the main parachute to replace the previous one-stage reefing.

Modifications will allow the command module to touch down at the same speed although it will weigh about 2,000 pounds more than the spacecraft which was tested April 4.

Northrop Ventura, supplier to the prime contractor on the earth landing system, also designed and built the parachute systems for Apollo's predecessors — the Mercury and Gemini Programs. W. A. Steyer is Apollo manager.

In a related field, Northrop Ventura is designing and testing parawings — steerable unmanned parachute-like vehicles, under contract to the National Aeronautics and Space Administration.

NASA VISITORS—Major General Samuel G. Phillips (right), director of the Apollo Program in the Office of Manned Spaceflight, Washington, D.C., is briefed on uprated Apollo earth landing system at Northrop Ventura by John Simpson of Quality Control and Wes Steyer, Northrop Apollo program manager. At General Phillips' right is George M. Hage, deputy director of the Apollo program. Also attending the briefing from NASA was Dr. Robert R. Gilruth, director of NASA's Manned Spaceflight Center, Houston (below, left). Dr. Gilruth is discussing parachute stitching with Northrop Ventura's Robert W. Young, manager of Quality Assurance.

IT'S A FACT AT NORTHROP

The sun never sets on Northrop people and products.

Northrop F-5's are creasing the skies from Iran to Taiwan and Vietnam. SR-71 reconnaissance aircraft—the world's fastest operational airplanes—flash through the skies over the United States, guided by a Northrop guidance and navigation system.

From the Mediterranean to the Caribbean, from the Arctic to the South Pacific, from Asia to the United States and Europe, Northrop Page Communications installations flash voice and telegraphic messages, many of them in high speed secret, military code.

Northrop and Polaris

Prowling the seas of the world are Polaris submarines equipped with Northrop DATICO checkout equipment, and Northrop-built target drones are used in many Free World countries to sharpen the aim of gunners and missilemen.

Dedicated amateur shortwave radio enthusiasts around the world look to Northrop's Chicago subsidiary, The Hallicrafters Company, for the finest of receivers. Village chiefs in remote spots of the world communicate with their neighbors with Hallicrafters shortwave equipment.

Guidance Systems

Thousands of gyroscopes built by Northrop in Massachusetts are used in guidance systems on submarines, surface ships, aircraft, missiles and even on spacecraft now in orbit.

Architectural products produced by Northrop Architectural Systems are installed in modern office buildings throughout the Free World.

Flares manufactured by Northrop Carolina make the night safer for U. S. and allied servicemen in South Vietnam.

And in numerous locations around the world trained Northrop field service experts are on hand to service and maintain Northrop-built products.

AVAILABLE — The Northrop Coin Club's 20-year commemorative medal, struck in bronze, is still available at $2 each to Northrop employees at the Hawthorne complex Personnel Activities office.

Disneyland Night Tickets Available

Tickets are ready for pickup at Personnel Activities outlets throughout Northrop Corporation.

They sell for $3.75 each.

They are good for all facilities at Disneyland from 8 p.m. to 1 a.m. May 25. That's Northrop Night at Disneyland when everything is reserved exclusively for Northrop families.

Discounts Still Good For Ice Show Seats

Final call for discount tickets for the 5 p.m. May 5 performance of Ice Capades at the Los Angeles Sports Arena was issued this week by NRC.

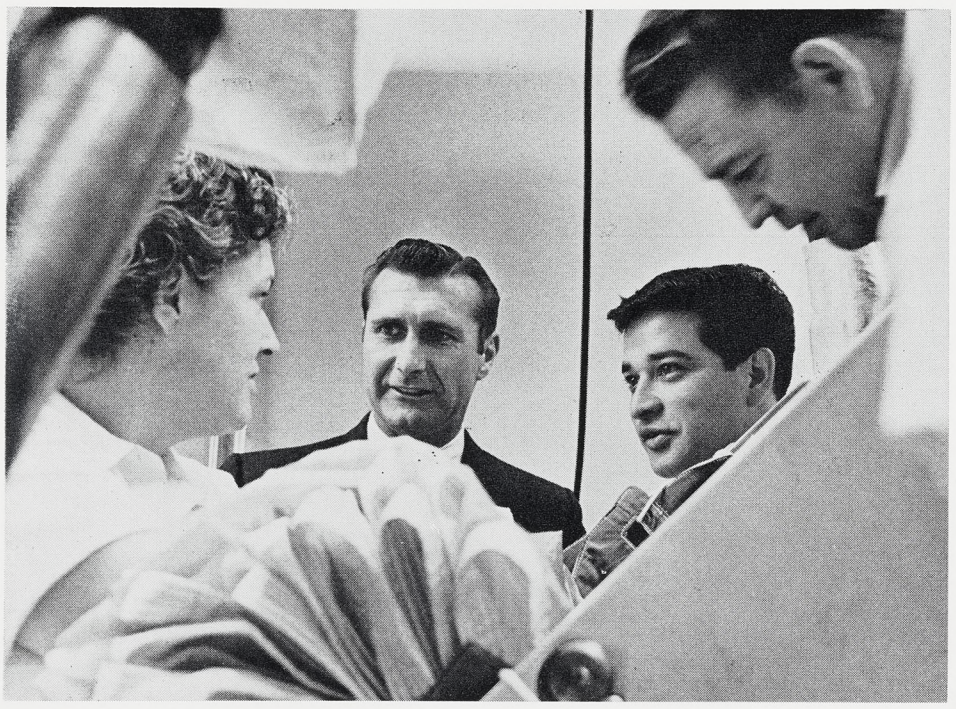
Regular $5 tickets are available at $3.50 each at Personnel Activities outlets.

DAYLIGHT SAVING TIME NEARS

Over the coming weekend, California, and a majority of the nation, makes the spring change from Standard to Daylight Saving Time. Clocks must be set ahead one hour.

All Northrop Corporation facilities will observe this change, and work shifts on and after April 28 will begin on Daylight Saving Time.

ASTRONAUT WOWS APOLLO PARACHUTE MAKERS



ASTRONAUT RICHARD F. GORDON, who visited Northrop Ventura last week, chats with parachute riggers Norma Jean Cretal, Jim Colunga and Buzz Correy in the Paradynamics Laboratory at the Division's Newbury Park headquarters. Following a morning arrival by helicopter, Navy Commander Gordon toured manufacturing, engineering and administration facilities, shaking hands by the hundreds and lunched with members of the Apollo team. In photo at right, he compliments Bobbie Taylor, a senior sewing machine operator in the Paralab. A veteran of the Gemini II mission, Astronaut Gordon has been assigned to the backup crew of the second manned Apollo flight. In chatting with Northrop employees, he urged the greatest care by all individuals in the weeks ahead prior to the first manned flight.

ENGINEERING DEPARTMENT, 28 YEARS AGO—This photograph, made on July 1, 1940, was the first ever taken of the Northrop Engineering department. It was taken near what is now the Plant Two parking lot. Eighteen of the employees shown are still with Northrop, 28 years later. They are H. R. Peterson, Connie Harley, Pop Jones, Ralph Allen, Gale York, Ray Reimer, Hal Page, Don Axt, Tom Greiner, Ray Gardner, Will Fraker, Harry Parker, Bill Appleton, Gene Brown, Roy Wolford, Rusty Bell, Jack Glenn and Glen Landis.

McDaniel Elected To Northrop Directorship

T. M. McDaniel, jr., president of the Southern California Edison Company, has been elected a member of the board of directors of Northrop Corporation, Thomas V. Jones, Northrop president, announced last week.

Mr. McDaniel, who joined Southern California Edison in 1956 as an executive assistant, was executive vice president of the utility company before being elected president.

Mr. McDaniel

Mr. McDaniel is a native of Richmond, California, and is a graduate of Stanford University and the Stanford Graduate School of Business.

He is an advisory director of the Bank of America and a director of the Automobile Club of Southern California.

Thomas V. Jones Chosen 'Businessman of Year'

Thomas V. Jones, Northrop president, was this month named Outstanding Businessman of the Year in Southern California by the Los Angeles Chapter of the National Association of Accountants.

Mr. Jones was praised for his "dynamic leadership that led Northrop Corporation to become one of the most successful and highly regarded diversified aerospace firms in the nation."

MEETINGS AGENDA

Plastics Industry Honors Tony Guerreiro

A. M. "Tony" Guerreiro, Manufacturing Research and Development supervisor at Northrop Norair, has been named Man of the Year by the Western Section, Plastics for Tooling Division of the Society of the Plastics Industry.

The honors were presented recently at San Diego State College, San Diego.

Mr. Guerreiro helped organize the Western Section, Plastics for Tooling, 10 years ago, and is a former national vice chairman for the Tooling Division.

Mr. Guerreiro has worked in the plastics industry for 30 years.

He joined Northrop in 1951 and has played a leading role in the use of plastics in aerospace fabrication.

* * *

Five Northrop Norair men were key participants in an AIAA Symposium on Low Speed Flight Technology held last week in the International Hotel, Los Angeles.

David M. Badger was chairman of the symposium committee, while Darrel L. Hirsch served as a committee member.

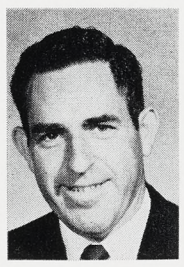
J. R. Stevens presented a paper on "Low Speed Wing Design—Program Development and Experimental Verification" at the session on Aerodynamics.

J. B. Sinacori and J. T. Gallagher co-authored a paper on "Low Speed Ground Based Simulation Techniques" (from V/STOL study) at the session on Flight Control.

PLASTIC INDUSTRY honors as Man of the Year were bestowed last month on Norair's Tony Guerreiro. Mr. Guerreiro is shown with hydroform press-made parts fabricated with various types of pad material. At the top of the group is a part made with a polyurethane pad he helped develop which greatly reduces the need for hand finishing.

A Nortronics supervisor will head a Northrop delegation of five to a data exchange conference next week in Los Angeles.

David Kessler, Interagency Data Exchange Program (IDEP) representative for Northrop Corporation, and an elected member of the Contractors Advisory Board (CAB) will serve as chairman of workshops on the committee that will conduct the three-day sixth annual Workshop Conference May 1, at the Ambassador Hotel in Los Angeles. Co-sponsoring with the CAB will be the Army, Navy, Air Force and NASA.



Mr. Kessler

Mr. Kessler, supervisor of Reliability Engineering at Anaheim, will be accompanied by Seth Lewis, supervisor of Reliability Engineering at Northrop Ventura; Brian Agnew, Reliability engineer at Norair; Conway Fuhrman, Standards engineer at Nortronics Hawthorne; and Tom Thompson, jr., a senior Reliability engineer at Anaheim.

Mr. Kessler, as workshop chairman, will establish, staff and coordinate the seven workshops, and report to the conference body on the workshop results. He will also outline CAB plans toward accomplishing workshop recommendations.

Achievement awards will be presented to the IDEP participants in recognition of outstanding support through voluntary and timely exchange of test, reliability and other technical data, effective use of interagency data and active participation in IDEP functions.

General chairman of the conference is Walter W. Westman, of the Sandia Corporation in Albuquerque, New Mexico.

* * *

Two Nortronics engineering specialists will deliver technical papers concerning Navigation department developments to the National Aerospace Electronics Conference in Dayton, Ohio on May 7.

Richard Berg will speak on the "C-5 Navigation Computing System," from a paper which he co-authored with another Nortronics engineer, John Sekiguchi, of the Advanced Computer Design group. The Berg-Sekiguchi paper will describe how the two digital computers are used in the C-5 to provide back-up computational capability in the aircraft's Inertial - Doppler Navigation Equipment.

John Lukesh will deliver his talk on "Simulation of the Nortronics Kalman Filter Augmented C-5 Inertial-Doppler Navigator." The session in which Mr. Lukesh will speak will highlight the benefits of the Kalman filter as opposed to its design problems, technical approaches and resulting equipment characteristics.

Mr. Berg

Mr. Lukesh

COMMENTARY

Who Benefits From Savings Bonds?

The United States dollar, as the world's strongest currency and the bulwark of the Free World economy, benefits from the sale of United States Savings Bonds at this critical time for defense of the dollar.

This is the reason that every Secretary of the Treasury since the inception of Savings Bonds, and the nation's vast banking system which sells them as issuing agents, favors their sale to more and more Americans. Savings Bonds resist inflation and contribute to efficient management of the public debt.

In addition, of course, the individual buyer benefits, as does his family, through improved financial health and a savings program for emergencies, education, vacations, retirement, home buying and purchase of important comforts of life.

Income taxes on the Savings Bonds interest can be postponed until lower earning years by postponing cashing them in—or by trading for H Bonds.

The United States Treasury seeks total sales of $5½ billion dollars in Savings Bonds during 1968. It also seeks 10½ million individual payroll savers to help to achieve this critically needed objective.

Every community and every important civic and service group, industrial leader, every professional and public service group is urged to join the effort.

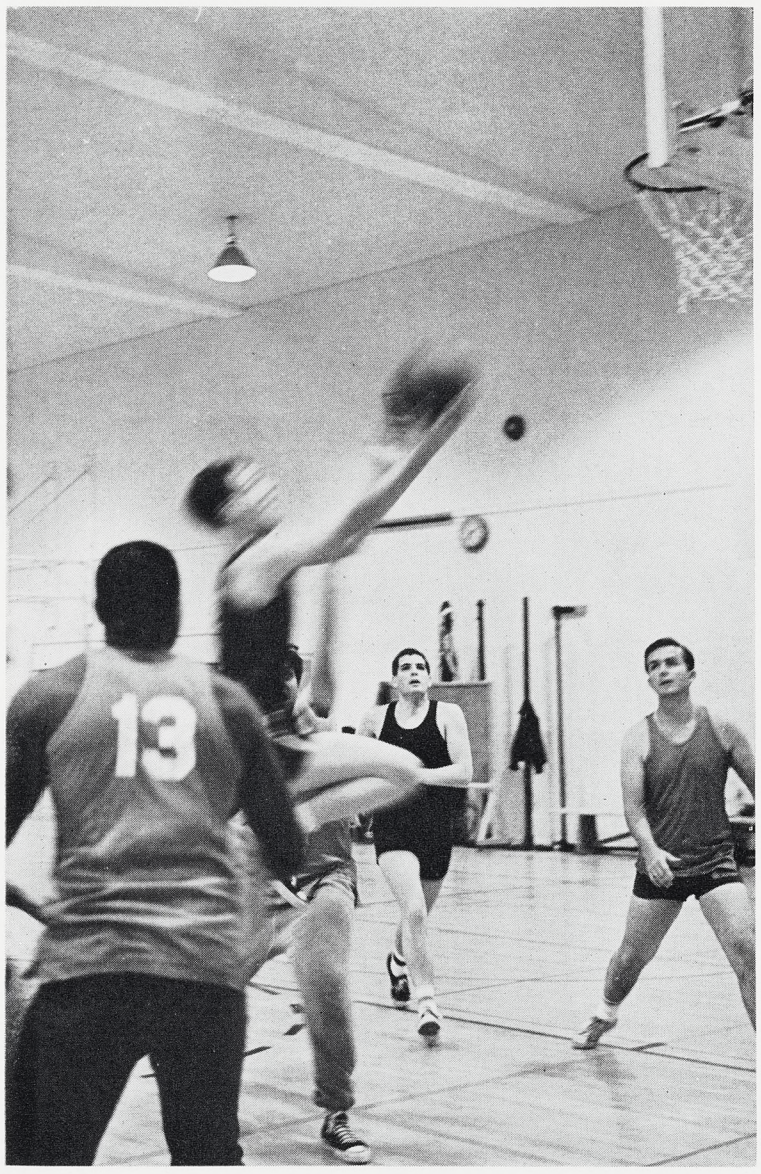
It begins here, with us. That is how in 26 years Americans decided to buy more than $150 billion in United States Savings Bonds . . . and at this time still hold more than $51 billion, 300 million as investments in America and Shares in Freedom.

Secretary Henry H. Fowler has called Savings Bonds the keystone of our debt management and protection of the dollar—and 24% of the publicly held debt are in Savings Bonds to help do this and to help resist erosion of inflation.

The 4.74% Freedom Share, maturing in 4½ years, is a companion purchase with the E Bond, paying 4.15% interest when held to a 7-year maturity. If lost, stolen or damaged, they are replaced by the government, to make them an "indestructible" security.

NRC Shop Basketball Champions Crowned

Photos by Ike Murata



Two Playoffs Mark Finale Of Busy Year

One of the most action-packed shop basketball seasons ever staged by NRC in the Hawthorne area concluded last week.

Winners in each of three major leagues will be honored soon by NRC.

Representing the four-team "C" league will be the Imposters, a team comprised of Nortronics Hawthorne personnel. The Imposters posted an 8-1 win-loss record for the year, just one notch above the Researchers with a 7-2 record.

The 6-team "A" league ended its season late last week. The Regals, winners of the second round of play, dropped the Falcons, first round winners, by a score of 60-49. Bill Merkovski of the Falcons, led the scoring parade with 24 points. The Regals were managed by Dan McCarthy; the Falcons by Dolphe McConnell.

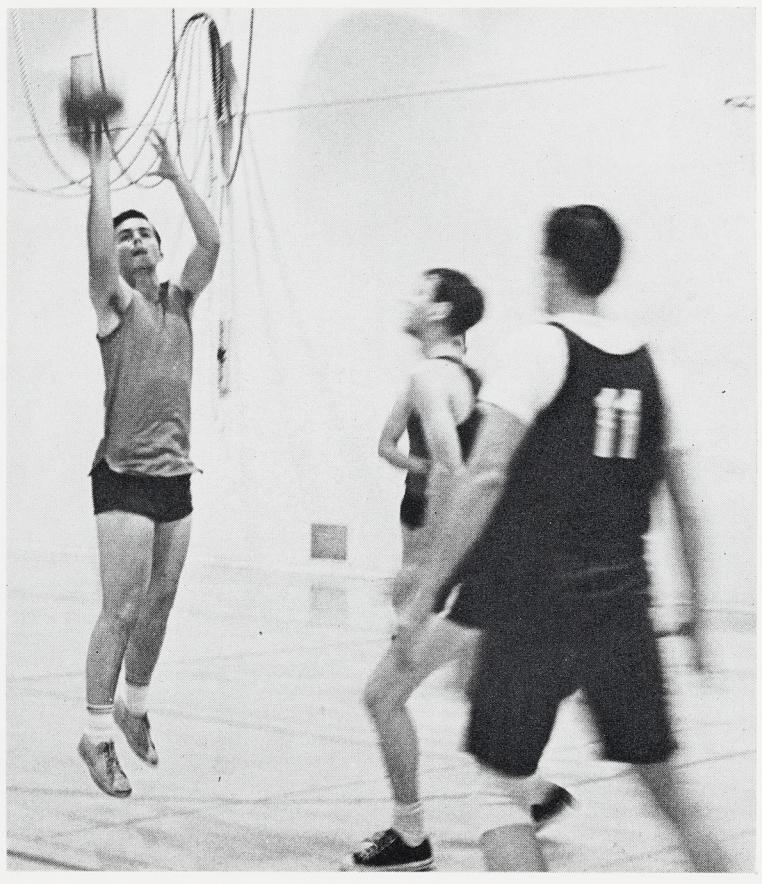
The larger "B" league had four teams taking part in each of two divisions. The Buggs of Norair won the Western Division title, while the Cardiacs of Nortronics Hawthorne took honors in the Century Division.

In a best two-of-three playoff series the Cardiacs moved ahead with a 43-37 victory, only to have the Buggs come back to win a 34-28 second game. In the deciding game, the Cardiacs won a close 44-41 contest.

Joel Fleiss and Carl Avazian scored 21 and 11 points, respectively, for the Cardiacs, while Tom Wedel sank 18 for the Buggs.

Mr. Fleiss emerged as the top scorer of the season with an average of 22.3 points per game. Gary Peterchick of the F-Troop team was second with an average of 18.4 points.

Vic Huang was manager of the winning Cardiacs. Rick Bradley was a playing manager for the Buggs.



Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Ford, 1958, r/h, $175. 835-6492. A

Pickup Truck, 1951, 6-cyl., 3-spd., $200. 644-3429. A

Chevrolet, 1965 Impala Super Sport, a/c, p/b, p/s, 327 eng., $1,850. 329-4837. A

Chevrolet, 1955, 2-dr., auto., $300. 378-5924. A

Chevrolet, 1960, 6-cyl., auto. trans., $60. 671-1660. A

Ford, 1963 Country sedan, eng. just o/hauled, factory air, near new tires, $750. 377-8655. A

Pontiac, 1964 Grand Prix, p/s, p/b, AM-FM, wire whls., Craig stereo, $1,400. 371-5261. A

Pontiac, 1963 Tempest coupe, $500. 835-2184. A

Station Wagon, 1960 Vauxhall, reblt. eng., good brakes & tires, $325. 714-535-8232. A

Buick, 1966 Special, convt., V-8, auto. trans., r/h, $1,595. 674-0960. A

Corvette, 1967, 327 cu. in., 350 h.p., p/s, 4-spd. close ratio, AM-FM radio, air cond., roadster model w/removable top, $4,000. 320-0206. A

English Ford, 1963 Anglia, $400. 377-4489. A

Mustang, 1966, air cond., w/w tires, V-8, auto., $2,150. 805-762-6711. A

Chevrolet, 1963 Impala, 2-dr. h/top, V-8, p/s, radio, $1,200. 534-2638. A

Shelby, 1967 GT 500, p/s, p/b, auto., 428 cu. in. Le Mans eng., 10,000 miles, $3,900. 675-1365. A

Cutlass, 1966 sport coupe, fact. air, p/s, p/b, auto. trans., console, under 25,000 miles, $2,300. 644-4094. A

Chevrolet, 1965 Impala Super Sport, r/h, p/s, b/seats, new tires, 283 eng., $1,700. 834-8672. A

Buick, 1962 Special convt., $695. 372-1643. A

Station Wagon, 1959 Rambler, new tires, $150. 371-2381. A

Chevrolet, 1963, auto. trans., 283 cu. in. eng., $1,000. 678-7449. A

Station Wagon, 1962 Chevrolet Nova, 6-cyl., auto., r/h, p/s, $550. 371-9595. A

Corvair Monza, 1961, auto. trans., $250. 534-2419. A

Mustang, 1965 h/top, 6-cyl., 3-spd. stick shift, 30,000 miles, $1,350. 456-2690. A

Triumph, 1959 custom, 650 cc, Harmon & Collins cams, 1 3/16 carbs., all reblt., $1,000. 379-7407. A

Chevrolet, 1963 Biscayne, 6-cyl., stick shift, $425. 864-0614. A

Oldsmobile, 1963 F-85, 4 new Double Eagle tires, 64,000 miles, $1,100. 343-7880. A

Buick, 1963 Skylark, auto., p/s, r/h, V-8, $1,150. 830-6163. A

Chevrolet, Impala, 4-dr. sedan, r/h, air cond., p/s, 25,000 miles, $1,650. 805-498-4776. A

Buick, 1964 Special, 4-dr., 55,000 miles, new tires, 6-cyl., $1,295. 363-2027. A

Karmann Ghia, 1961 convt., new top, r/h, convt. boot, $975. 325-7351. A

Station Wagon, 1959 Ford, 6-cyl. auto. trans., r/h, $175. 377-7241. A

Chevrolet, 1960 2-dr. h/top, r/h, new trans., 348 eng., $400. 679-7840. A

Station Wagon, 1960 Ford, stick shift, $325. 325-7605. A

Camaro, 1967 SS 350, 4-spd., posit., mag. wheel covers, $2,250. 714-897-6059. A

Dodge wagon, wench & o/sized tires, $1,000. 675-6186. A

Pickup Truck, 1963 Chev. ½-ton, cab-hi-camper shell, many extras, $1,095. 324-1593.

Cadillac, 1963 sedan, De Ville, fully equipped, new tires, $1,895. 805-947-4782. A

Pickup Truck, Chevrolet, 1956, $650. 675-8891. A

Karmann Ghia, 1959 convt., 1964 VW eng., r/h, $350. 294-0541. A

Chevrolet, 1959 Impala, 2-dr. h/top, auto., $250. 327-2447. A

Camper-Bus, Volkswagen Delux, inc. water tank, ice box, extras, $1,940. 714-962-1805.

Ford, 1965 convt., 17,000 miles, new tires & paint, p/b, p/w, air cond., $1,850. 391-8072. A

Volkswagen, 1968, radio, 4-spd., less than 5,000 miles, take over $64.56 mo. pymt., $1,700 bal. 692-8373. A

Camper-Van, 1966 Ford, auto., ice box, stove, sink, water tank, awning w/sides, sleeps 2, $2,100. 375-3257. A

Corvair, 1963, 4-dr. sedan, r/h, auto. trans., $425. 541-1226. A

Truck, 1962 Chev. ½-ton, storage boxes on sides, Stahl Service body, major tuneup & tires, $825. 564-2263. A

Dodge, 1963 Polara, 2-dr. h/top, p/s, p/b, r/h, $800. Box 801. A

Mercedes Benz, 190 SL, $995. 373-1395. A

Automobiles For Sale

MG TC, 1948, right hand drive, 19″ whls., needs paint, $1,095. 805-944-2678. A

Chevrolet, 1967 Nomad, p/s, p/b, flr. shift, tach, chrome whls., new brakes & clutch, $645. 325-8478. A

Ford, 1966 Galaxy, 2-dr., power, air, console, $1,875. 349-4772. A

Mustang, 1965, 6-cyl., air cond., p/s, auto. trans., new paint, $1,750. 545-4964. A

Chevrolet, 1964 Super Sport convt., air cond., p/s, p/windows, 4-spd., 327 eng., $1,350. 373-3669. A

Chevrolet, 1967 Impala, p/s, p/b, within warranty, $2,650. 714-638-2025. A

Lincoln, Continental, 1964, $1,895; Pontiac 1964 Bonneville, 2-dr. h/top, $1,150; Chevrolet, 1964 Impala S.S. Cpe., $800, repossessions, Norair Credit Union, ext. 1117. A

Household Items For Sale

Bar, walnut finish w/black matching stools, 5 mos. old, $95. 805-495-0772. B

Trundle Bed, lower part, maple head & foot board, mattress, $25. 393-2373. B

Dining Room Set, mahogany, seats 6, 4 chairs, $35. 754-3037. B

Crib, Babyline, matching chest, ant. white & gold, dble. drop sides, colonial style, canopy top, $50. 714-637-6151. B

Range, O'Keefe & Merritt Contempo, single oven, lower storage center, rotisserie, $200. 754-9889. B

Refrigerator, Philco, $20. 374-5133. B

Table, Duncan Phyfe, dropleaf extension, 4 chairs, $30, many other items. 757-7824. B

Crib, walnut, $30. 835-3869. B

Crib, mattress, natural wood, $10. 376-8014. B

Crib, mattress, $15. 325-8175. B

China Cabinet, walnut, Danish modern, top sliding glass doors, $50. 532-4368. B

Bunk Beds, metal, wood trim, w/ladder & mattresses, $25. 376-4831. B

Mangle, Ironite, $100. 832-1895; 321-2611. B

Counter Top, cultured marble, 18″x49″, beige, never used, $25. 326-5979. B

Chairs, 2 Danish walnut w/brown cushions & painting, modern 3-pt. dimensional, walnut frame, city scene, $40. 326-0340. B

China, 91 pcs., service for 12, $45. 674-6076.

Door, 2-pc. Dutch w/hardware, 32″ wide, $40. 293-5993. B

China, Wentworth, silver wheat pattern, service for 8, inc. snack set, extra cups, never used, $80. 676-6303. B

Miscellaneous For Sale

Bicycle, boy's 20″, w/training whls., new tire, $15. 714-673-0244. C

Home, 2-bdrm., new roofing, paint in & out, h/wood floors, 15 mins. from Northrop, $19,950. 754-3554. C

Pups, Alaskan Malamute, AKC reg., male & female, $50 up. 714-635-5304. C

Carrier, for trailer-motorcycle, set-up for 2 bikes, 15″ wheels, new lights, $125. 867-1476. C

Surfboard, $25. 532-7095. C

Horse, ½ quarter, ½ Arab gelding, 8 yrs. old, $500. 644-2717. C

Mini-Bike, 8 h.p., lights, horn, dual tanks, racing seat, $158.50. 393-5649. C

Pups, min. dachshund, AKC, 6 wks. old, dk. red, $75 to $100. 582-1079. C

Supercharger, for 1962-1966 Volkswagen, Judson model, complete kit incl. installation instructions, $100. 379-4807. C

Scuba Tank & harness, $25. 328-3306. C

Boat, 10′, fiberglass covered wood, newly painted inside, $50. 327-4585. C

Awning for 8x12 trailer w/hardware, used very little, $45. 714-526-2071. C

House, 4-bdrm., 1½ bath, used brick fireplace, knotty pine paneling, cpts., dps., bltins, block wall fence, dble. att. gar., assume 5¼% FHA loan, $22,500. 714-897-9075. C

Surfboard, Jacobs, 9′, $40. 633-4477. C

Wedding Rings, cost $350, $200. 376-6182. C

Movie Camera, Argus Super 8, 4 to 1 manual zoom lens, elec. & fully auto., case, $75. 645-6211. C

Home, Tustin area, 3-bdrm., 2½ baths, living rm., family rm., lge. lot, $26,950. 865-3108. C

House, 3-bdrm., 1¾ bath, h/wood floors, cpts., dps., bltins, landscaped, near schools, $27,250. 675-0928. C

Shopsmith, many attachments, $225. 677-6675. C

Air Conditioner, RCA Whirlpool, window mounting equipment inc., 8,700 B.T.U., $60. 757-1948. C

Press, letterpress, 10x15 C&P open hand, $175. 752-2717. C

House, completely furn., 5 rooms, enc. patio, landscaped, in Joshua Tree, $14,500. 376-4787. C

Hair Dryer, professional type, Helene Curtis, w/chair, temp. settings, pink, $60. 671-6577. C

Acreage, 5 acres, near Lake Los Angeles, low dn., low monthly pymts., liberal terms, $5,980. 877-2219. C

House, 4-bdrm., 1¾ bath, dps., cpts., bltin stove, oven & d/washer, newly painted, 5 mins. from Northrop Hawthorne, $31,500. 324-8464. C

Tools, assorted hand & electric, $15-$20. 675-2510. C

Honda, 1966 Scrambler, 175 cc, custom paint, $350. 677-8276. C

Miscellaneous For Sale

Camper, Hi-Way Cruiser, shell type, insulated & paneled, 1963 model, bunks & storage cabinets, fits any 8′ Fleetside pickup bed, $250. 370-8869. C

Camper, 1963, teardrop, 8½′ overhead w/jacks, $800. 676-1710. C

Yamaha, 1964, 125 cc, w/helmet, $145. Box 802. C

Motorcycle, 250 cc Matchless, $300. 672-4450. C

Walkie Talkie, Sony, leather cases & batteries, $45. 677-3920. C

Playpen, Cosco deluxe, used 1 year, $15. 323-6745. C

Motorcycle, 1964 Harley Davidson XLCH, custom paint, recently o/hauled, $995. 370-2214. C

Stereo System, Harman Kardon, 50 W amp., Dynaco FM3 tuner, KLH 17 speakers, $275. 756-0704. C

Organ, Hammond, model A100 w/Hammond PR 40 speaker system, full size w/percussion, reverb & Mays bass, 1 yr. old, organ $1,700; speaker $400. 830-1442. C

Travel Trailer, 19½′, 1966 Terry, tandem axle, dual brakes, elec. & hydraulic, $2,000. 430-4622. C

Sailboat, 18′, Bermudian, new dacron sails, needs paint, $500. 831-5507. C

House, 3-bdrm., 2 baths, lge. lot, commercial zone, in Anaheim, $25,000. 928-2257. C

House, in Garden Grove, 4-bdrm., 2 full baths, 2-car gar., disposal, lge. fenced-in yard, low down, $21,000. 581-5208. C

Poodles, miniature toy, 2 mos. old, papers, $60. 375-5885. C

Rifle, Remington Model 700 BDL 7 mm Rem. mag., fired only 20 rounds, Redfield 3X-9X scope mounted, inc. ammo., $240. 596-0521. C

Boat, 14′ runabout w/trailer, 30 h.p. Mercury motor, $320. 671-8672. C

Trumpet, $35. 323-8797. C

Air Conditioner, Mark IV, for auto, $100. 776-1928. C

Shocks, set for 1966, '67 or '68 Ford, $15. 671-6692. C

Encyclopedias, 1952 Funk & Wagnalls, 36 vols., $25. 675-7316. C

Surfboard, Rick, 9′ 4″, $40. 325-5875. C

Motorcycle, 1966 BSA, 650, 2,000 miles, $850. 324-2942. C

Camera, Miranda D f1.5, case, $125. 377-4230. C

TV, 17″ table model, $20. 714-523-0995. C

TV, rock maple, color, 23″ in lge. cabinet, $275. 644-4529. C

Piano, upright, $175. 675-3541. C

Tape Recorder, Concord 320, dual power, portable, $50. 805-498-3549. C

House, 3-bdrm., 2 baths, bltins, cpts., dps., f/a heat, fireplace, b/wall fance, dble. det. gar., landscaped w/patio, 12 mins. to Norair, $26,500. 835-5377. C

House, 3-bdrm., 2 baths, dps., fenced yard, dble. gar., near ocean in Huntington Bch., $18,900. 714-847-6166. C

Camera, Minolta SRT-101, single lens reflex, behind-the-lens meter, interchangeable f/1.7 lens, case, $165. 376-4473. C

Stole, natural mink, from Dicker & Dicker, never worn, $350. 545-4268. C

Boat, 40′ Matthews T.S., elec. refrig., s/s radio-telephone, rdf, many extras, sleeps 7, $13,000. 379-3313. C

Pistol, Colt .45 auto., model 1911A1, $85. 379-3487. C

French Poodle, AKC reg., teddy bear marked, 8 wks. old, $75. 754-3665. C

House, 4-bdrm., near Del Amo Shopping Center, family rm. w/bltin TV & bar, bltin refrig., lge. corner lot, block fence, 10% or more down, $36,900. 370-6601. C

Miscellaneous For Sale

Bathinette, $7. 328-5840. C

Carburetors, 1¾″ SU & manifold for MGA & MGB, $50. 324-1984. C

House, in Oceanside, 2-bdrm., lge. enc. patio, fenced back yard w/fruit trees, $16,000. 328-9028. C

Drums, St. George, Ludwig cymbals & Speed King pedals, $175. 714-830-2835. C

Poodles, mini-toy, AKC reg., shots, silver, $75 ea. 714-847-8263. C

Home, 3-bdrm., 2 baths, near Gardena High School, all bltins, d/washer, landscaped w/sprinkler sys., $32,500. 323-3793. C

Sailboat, 13½′ glass sloop, alum. mast & boom, dacron main, jib & spinnaker, extras, $495. 375-7265. C

Honda, 1963, 50cc, recently o/hauled, $100. 671-6592. C

Encyclopedia, World Book, 1954, stand, $25. 755-8018. C

Volkswagen Camper, 1963 unit, built in, $1,000. 375-9811. C

Acreage, 5 acres in Antelope Valley near Willow Springs, on good road, $35 dn., $35 mo., inc. 6% interest, $3,500. 378-1026. C

Mini-Bike, 6.4 h.p., $100. 831-4586. C

Motorcycle, Yamaha, 305cc, 1967 model, less than 2,400 miles, $550. 714-539-9339. C

Camera, Leica, 50mm, 90mm & 135mm lens, $99. 379-4075. C

Poodle, black female, 7 mos. old, has shots & license, $12. 541-1423. C

House, 3-bdrm., 7 mins. from Northrop, G.I. or FHA, $21,950. 757-2510. C

Ski Boat, 14′ Catamaran, glass covered, plywood hull, 75-A Merc. eng., 15″-wheel trailer, $750. 322-5434. C

Home, 3-bdrm., in Lawndale, extra bldg. in rear, fenced yard, 10 mins. from Norair, $19,950. 370-7742. C

Encyclopedia, complete set, 26 books, Universal Standard, $20. 674-1847. C

Organ, antique, 10 stops, pump style, $225. 714-525-9633. C

Lot, new boat slip, Bass Lake, on quiet, secluded cove, lge., fairly level, adjoins national forest, $750 dn., $50 mo., $3,500. Box 803. C

Surfboard, 9′4″ Jacobs 67 Launce Carson, $100. 375-0813. C

Home, 2,200 sq. ft. in Pacific Palisades, 3-bdrm., living rm., lge. family rm., all elec. kitchen, 2 patios, less than 8 yrs. old, $57,000. 392-2592. C

Apt, 6 units, 5 mins. from Northrop, enc. gars., lge. lot, low down, assume low interest loan, $54,000. 679-7963. C

Trailer, 1965 24′ Airstream, self-contained, custom interior, $4,999. 676-4865. C

Wanted to Buy

Motorcycle, or parts, any American-made, manufactured prior to 1920. 370-6400. D

Dryer, gas, in good condition. 370-7749. D

MG or Triumph convt., 1955-1958. 423-1363.

Boat, 16′ fiberglass, V hull, equipped with at least a 65 h.p. motor. 805-942-6216. D

Table, dropleaf w/extra leaves. 324-0134. D

Tires, 2 5:20x14 in good usable condition for Fiat. Box 804. D

Auto Rack for surfboard. Box 805. D

Free (To Be Given Away)

Kittens, part Siamese, ready for good home about May 1. 676-2803. F

Kittens, 7. 714-528-3758. F

Rentals Offered

House, 4-bdrm., 2 baths, 2-story, in Santa Ana Canyon-Anaheim area, cpts., bltin stove, d/washer, disposal, refrig., 1 yr. lease w/option to buy, avail. June 15, $225 mo. 714-637-6634. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Long Beach Blvd. & Del Amo, Long Beach. Jean Wigley, Norair ext. 2605, 423-1711.

Prairie or Crenshaw Blvd. & 171st, Torrance. Accept ride at Yukon & 171st Sts. David R. Miller, Norair ext. 2004, 309-9303.

7:30 a.m. — 4:15 p.m.

Del Amo Blvd. & 190th, West of Hawthorne Blvd., Torrance. Desire ride one way from Mariposa Facility or both ways if convenient, Jo Anne Witherspoon, Mariposa ext. 4071, 542-3267.

Hawthorne Blvd. & 104th, Inglewood. Irene McCarthy, Norair ext. 1581, 672-7506.

8 a.m. — 4:45 p.m.

Lynwood Area off El Segundo Blvd. near Long Beach Blvd., Lynwood. Sheila Ondrasek, Norair ext. 2001, 537-3098.

Rentals Offered

Vacation Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $20-$35 w/ends; $45-$75 wk. 754-5288. G

Cabin, Green Valley, $25 w/end; $45 wk. 324-0649. G

House, 2-bdrm., unfurn., near Northrop, fireplace, lge. yard, $125 mo. 676-6014. G

Cabin, Lake Arrowhead, modern, 200 ft. from lake, $100 wk. 375-2255. G

Apts, 1 & 2-bdrm., furn. or unfurn., completely refurbished, cpts, bltins, dps., pool, carport, adults, 15 mins. from Nortronics, $95 & up. 714-522-1237. G

Cabin, Lake Arrowhead, close to lake & village, fireplace, patio, $60 wk. 761-9645. G

Duplex, 2-bdrm., cpts., dps., storage, bltins, pullman bath, gar., near Torrance & Crenshaw, $130 mo. 714-826-6744. G

Vacation Cabins, Lake Gregory & Crestline, sleep 6, make reservations for June through Sept., $25 w/ends; $60 wk. 391-2040. G

House, 3-bdrm., 1½ baths, bltins, fireplace, gar., in Manhattan Bch., $235 mo. 372-7994.

Cabin, Green Valley Lake, $35 w/end; $55 wk. 320-2002. G

Apt, 2-bdrm., unfurn., carport, laundry rm., 20 mins. from Northrop, 1 child OK, $100. 537-3098. G

House, 3-bdrm., unfurn., in Thousand Oaks, $160 mo. 372-1259. G

Home, 3-bdrm., 2½ baths, avail. May 1, walking distance to Del Amo Shopping Center, $175. 373-2469. G

Cottage, Ocean Bch., San Diego, make reservations now, $65 wk. 714-826-2007. G

Rentals Wanted

Truck, w/small camper for 3 weeks, no rough roads, no children. 674-6466. H

Child Care

Child Care offered, hr., day or wk., all ages, my home. 644-3817. I

Babysitter, mature, wanted for 4 small girls. 374-5133. I

Child Care offered, days, 6 blocks from Norair, yard, hot lunches. 422-2018. I

Child Care offered, 1 or 2 children, 1 to 5 years, in my home, days, fenced yard, lunches. 675-2683. I

Found

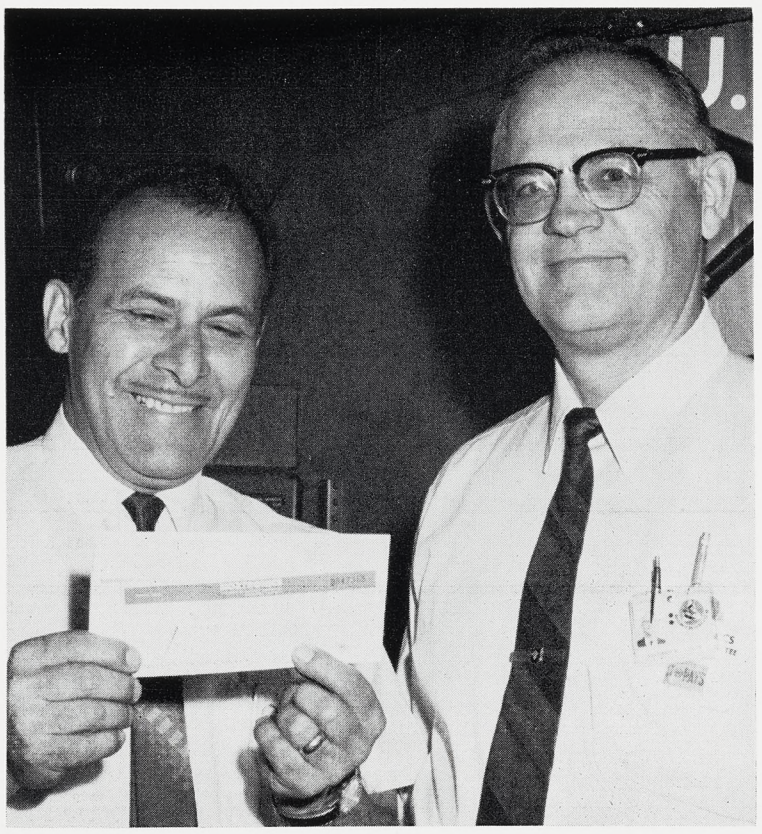
Watch, Timex. 676-1018. K

Personals

Day Shift employees coming to work witnessing auto accident about Jan. 9 involving a blue Buick & a white auto turning left from El Segundo Blvd. on to Prairie Ave., call 644-2163. L

AT THE FLIGHT SIMULATOR — Nancy Peschke, a sophomore at El Camino College, talks with Norair's J. B. Sinacori, during a tour of flight simulator facilities. Miss Peschke, a sociology major, was preparing a report on visual and auditory perception, as they relate to flight simulators, for a class in psychology.

A $600 CASH AWARD for a better way with wires. Mrs. Gerry Fleming (center) is presented a suggestion award check by Ross Miller, Nortronics vice president and manager of the Navigation department. She devised a procedure for labeling the tube sections of wire boxes like the one shown at right. Margaret Paulos (right) and Mrs. Fleming are electronics assemblers in the Wire Preparation department at Hawthorne.



DOLLARS FOR HIS THOUGHTS on a better way to handle the primer painting process—that's what Gilbert Guevara (left), mechanical assembly inspector, received in the form of a suggestion award check for $160, presented by his supervisor, Richard P. Clute, of the Product Assurance department at Anaheim.

Newport Voters Elect McInnis to City Council

A Nortronics director has been elected to the city council in Newport Beach.

Don McInnis, director of Ordnance Manufacturing at the Page Court Facility, defeated his incumbent opponent by a 2-1 plurality. He received more than 4,600 votes in the April 9 election.

Mr. McInnis

In achieving his first public office, Mr. McInnis conducted a "truly grassroots campaign." He frequently spoke at meetings of business and professional groups and to informal gatherings in coffee klatches and evening sessions.

Mr. McInnis, in speeches throughout the Newport Beach area, spelled out his strong support for issues favoring schools and education and "made every effort to identify with the homeowner." He will serve a four-year term.

Mr. McInnis, a Northrop employee for 16 years, is married and lives in Newport Beach. He has a son at Orange Coast College in Costa Mesa, and a daughter who is a graduate student at Sacramento State College at Sacramento.

Northrop Woman Second In Toastmistress Contest

Marguerite Dougherty, first vice president of the Smoothsayers Toastmistress Club, took second place in the Council One Golden Desert Region speech contest held April 6 at the Princess Louise Restaurant.

Mrs. Dougherty entered this competition after winning contests at the club and area level.

DEPUTY CHIEF Ed Davis of the Los Angeles Police Department tells nearly 300 members of the Nortronics Management Club that law enforcement agencies everywhere could make use of the electronics capability of Nortronics. He challenged the industry to apply electronic ingenuity toward making Los Angeles law enforcement more effective.

Two Employees Receive Major Cash Awards

Two major suggestion awards were presented to Nortronics employees this month.

A check for $600 was awarded to Gerry Fleming of the Wire Preparation department in Hawthorne, and Gilbert Guevara, a mechanical assembly inspector, was awarded $160 at Anaheim.

Mrs. Fleming's suggestion to label tube sections of wire boxes with wire information will save Nortronics about $6,000 the first year. Mr. Guevara's idea of a new method for paint priming of parts will reduce expenses by nearly $1,600 during the same period.

Fourteen other Nortronics employees received $438 in cash awards this month, ranging from $10 to $82.

Police Official Tells Need for Electronic Aid

A challenge to Nortronics was issued last week by Los Angeles Deputy Police Chief Ed Davis.

In a speech before the Nortronics Management Club meeting in Long Beach, Chief Davis said that police departments all over the country "urgently need advanced electronic technology applied to fingerprint transmitting techniques, the engineering of better squad car radios and weaponry development.

"We don't necessarily want or need wall-to-wall policemen like New York has. But what we could make immediate use of is instant electronic aids which could do the work of many men if they had this electronic capability."

Chief Davis said that the average citizen can aid the police effort by looking carefully at political candidates. He said it is a citizen's responsibility to determine just where a candidate stands in relation to legislation that could hamper or help law enforcement.

The $120 million annual Los Angeles Police Department budget "could support the purchase of expensive electronic squad cars—if they were available, but they are not," said the chief.

Chief Davis expressed hope that "we can get electronics help from your kind of people."

Arata Aids in Major Study On Future of Air Industry

A major report concerning "Air Transportation 1975 and Beyond: A Systems Approach," published by the MIT Press, has included an important contribution by a member of the Nortronics Marketing staff.

Winfield H. Arata, jr., deputy director of Nortronics Marketing, was chairman, and recruited 15 members to participate in his Air Traffic Control Panel, one of six panels involved in the study.

Mr. Arata

The group of experts in this panel included representatives from industry, government and the academic community. Among these was A. L. Hedrich, assistant director for Research and Development at Page Communications Engineers, a Northrop subsidiary.

The sole objective of the air transportation workshop was to arrive at some significant conclusions upon which recommendations could be made. It is the opinion of Mr. Arata and the other panel chairmen that this first attempt at a comprehensive systems approach to the problems of air transportation has been successful in accomplishing the objective.

The workshop report points out a need for better Vertical Takeoff and Landing (V/TOL) navigational aids. Nortronics' activity in Omega and inertial navigation systems are candidate systems for the needed advancements in V/TOL operations. These operations are expected to expand greatly in the next decade.

The project co-chairmen were General Bernard A. Schriever, U.S. Air Force, ret., formerly commander of the Air Force Research and Development Command, and later of the Air Force Systems Command; and William W. Seifert, assistant dean of the School of Engineering at Massachusetts Institute of Technology, and director of MIT's Project TRANSPORT.

The panels dealt with:

(1) socioeconomics — addressed to the socioeconomic environment in which the air transport industry would be operating in the late 1970's;

(2) air vehicles—outlined anticipated advances in the technology of air vehicles;

(3) air traffic control—examined present requirements, the ability of existing equipment and operating procedures necessary to meet these requirements, and the directions future advances may take;

(4) airports and terminals—examined the functions and characteristics of existing and proposed forms of airports;

(5) mixed-mode collection and distribution—examined the problems of getting people and goods to and from airports; and

(6) government policies—spelled out the government policy climate which might be anticipated.

Louvier Installed As President Of Toastmasters

Jean Louvier, a lead engineer in Materials and Processing on the Boeing 747 Program, was installed this month as president of the Northrop Toastmasters Club.

Also installed in ceremonies at the Ramada Inn in Los Angeles were Alan Caterson, educational vice president; Al Weinstein, administrative vice president; Ken Henry, secretary; Vern McNaughton, treasurer; and Bob Leutzow, sergeant-at-arms. Installing officer was Dwight Johnson, past district governor for Toastmasters International.

Certificates were awarded to members who completed the club's Speechcraft public speaking course during the year.

Outgoing president Hank Greenberger of Nortronics Palos Verdes was given a trophy for Toastmaster of the Term. He also received an award for winning more than 40 separate speaking events during the year.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 9 | May 8, 1968

SPEAKING OF PROGRESS — Frank Lynch, Nortronics vice president and Anaheim manager, outlines the present position and future goals of the Anaheim department to employees. Mr. Lynch, on the platform at right, spoke in an attempt to convey the department's bright outlook to "those who brought it about." He predicted that, in five years, business at Anaheim will be 50 per cent better than today, and another 1,000 employees will be hired.

Increases in Business, Hiring Predicted

An over-all level of sales 50 per cent greater than today, with a corresponding employee increase was the five-year objective established for the Anaheim department, according to Frank Lynch, Nortronics vice president and Anaheim manager.

In seven separate informal sessions, Mr. Lynch met hundreds of Anaheim employees two weeks ago in talks designed, in his words, "to review with all of our people our current and future business outlook."

Mr. Lynch said that Anaheim will accomplish these goals "by continuing a balanced program based on growth in electronics, continuing support of ordnance, increased activity in electro-optical production and expansion of fabricated products for aircraft assembly." This is important because, "with balance there is stability, and with growth there is opportunity," he said.

In his remarks to the outdoor gatherings, Mr. Lynch spoke of the positive upward change in business activity during the past two years, pointed to broad increases in employees and facilities and reviewed the various Anaheim department and Nortronics programs, "which have met or exceeded our expectations and plans."

Mr. Lynch said that, "two-thirds of our next fiscal year business is now firm. During the coming year business will continue at about the same level as last year. Although there may be some changes in individual activities and product lines, the amount of people and facilities at Anaheim will remain relatively constant over-all."

He said that the future of Anaheim "will continue to be built on our strengths such as performance and quality. We will move toward a systems approach wherever possible, and stress combination of technologies and products with other Nortronics departments, Northrop divisions and subdivisions."

"In facing the uncertainties of the future environment," he said, "we must plan for this future, but at the same time maintain our flexibility to respond to changes and opportunities."

The manager complimented the employees on their past performances, saying, "we have accepted the challenge of the future and of the goals established for us because we're confident of our ability to perform."

C-5 Navigation System In First Test Flight

Northrop Equipment Performs Successfully In Flight Aboard Air Force C-141

A major milestone was achieved late last month when the Nortronics-built C-5 inertial navigator underwent its maiden flight in a C-141 test aircraft. Throughout the five and one-half hour flight, the navigation system performed successfully within its rigid specification.

Ross Miller, Nortronics vice president and Navigation department manager, congratulated all of those participating in the C-5 Program for their dedication to the design and building of quality products which Nortronics customers have come to "recognize as standard performance." He announced this important achievement in brief remarks to the employees of the department last Friday.

"There is a great deal of hard work ahead," Mr. Miller said, "to continue the flight test program successes, on schedule production deliveries, and important work in furthering cost reductions. This flight milestone, therefore, must be viewed as the first in a long series of necessary accomplishments rather than an end in itself."

Nortronics has been delivering hardware for the giant U. S. Air Force C-5 Galaxy to the Lockheed-Georgia Company since last August.

Blood Drive Scheduled

Signups will begin soon throughout Northrop facilities in the Hawthorne complex for volunteer blood donors to give at a June 6 blood bank.

The bloodmobile will conduct operations at the NRC meeting center on Chadron Street with regular transportation pickups at Plants One, Two and Three, Northrop Corporate Laboratories and Nortronics Hawthorne.

Five Receive 20-Year Pins At Nortronics

Five Nortronics employees completed 20 years of Northrop service last month, and nine others have been recognized with 15-year service awards.

The 20-year awardees are Roland Gagon, Instruments and Controls Laboratory; Clyde Getz, Special Projects office; Jack Raquet, Precision Mechanical Development; and Lewis Richman, System Evaluation and Integration, all of Hawthorne; and Randy McCarl, Electronic Production and Support group, Anaheim.

The fifteen-year employees are Ernest J. Hill, jr., Ernest Johnston, Fred Marek, Shuji Maruko and Paul Smith, all of Anaheim; John Cooper, Kazuo Morita and Shirley Stevenson of Hawthorne; and Ella Post of Palos Verdes.

Dr. Friedman Delivers Paper At Ohio Seminar

An in-depth seminar paper concerning "The Applications of Constraint Theory" was presented yesterday by a Nortronics engineer to Battelle Memorial Institute at Columbus, Ohio.

Dr. George Friedman, chief of Systems Analysis at Palos Verdes, was invited by the institute to address its Electronics Systems department, members of the Mathematics and Engineering departments at Ohio State University, technical personnel from Bell Telephone and other local industry representatives.

Dr. Friedman

The group of about 100 heard Dr. Friedman discuss new systems analysis techniques for simulation of complex, multi-dimensional and heterogeneous systems.

Mariner Mars Equipment Delivered on Schedule

Deliveries of all Mariner Mars '69 hardware parcels and documentation were completed on schedule by Nortronics last week, according to Bill Armstrong, Nortronics MM '69 Program manager.

The Mariner spacecraft hardware components, accepted by the California Institute of Technology's Jet Propulsion Laboratory in Pasadena, have been designed and built by Nortronics under a $5 million subcontract from JPL, technical manager of the program for the National Aeronautics and Space Administration.

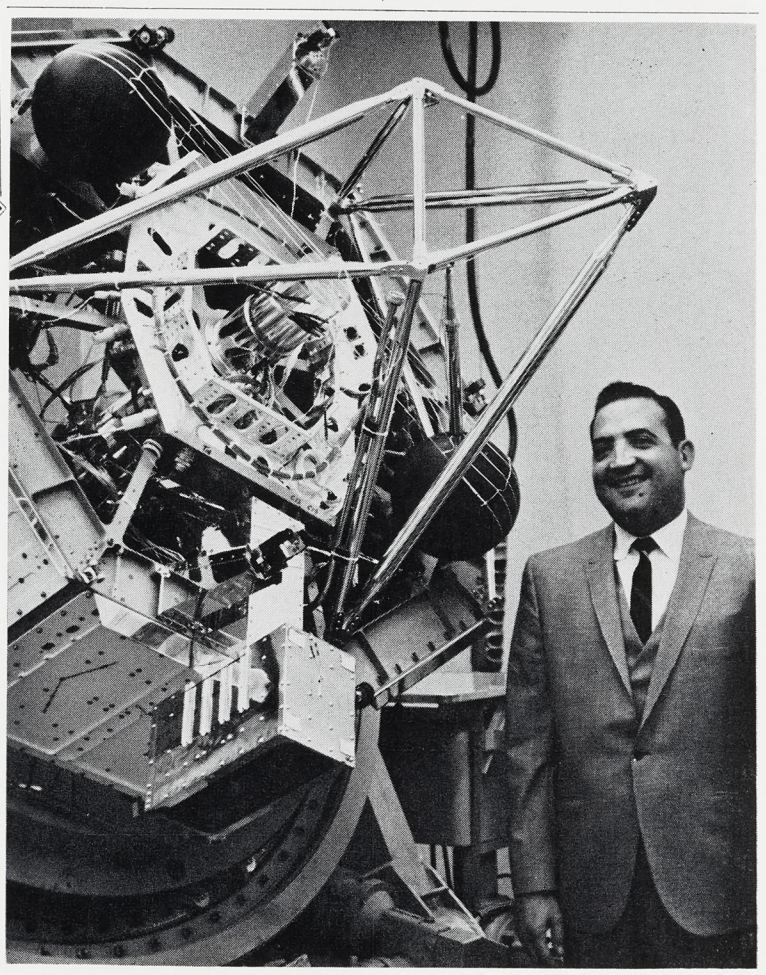
The next major Northrop responsibility for the Mariner '69 Program will rest with the 45 Nortronics engineers and technicians assigned to JPL. They will continue to support the program through an evaluation and test period culminating with the space shot at Mars scheduled for next February.

A thermal control model and a developmental test model of the spacecraft are already undergoing rigid subsystem analyses at JPL and, by summer, a proof test model, now in thermal vacuum testing, will be submitted to similar testing and analyses.

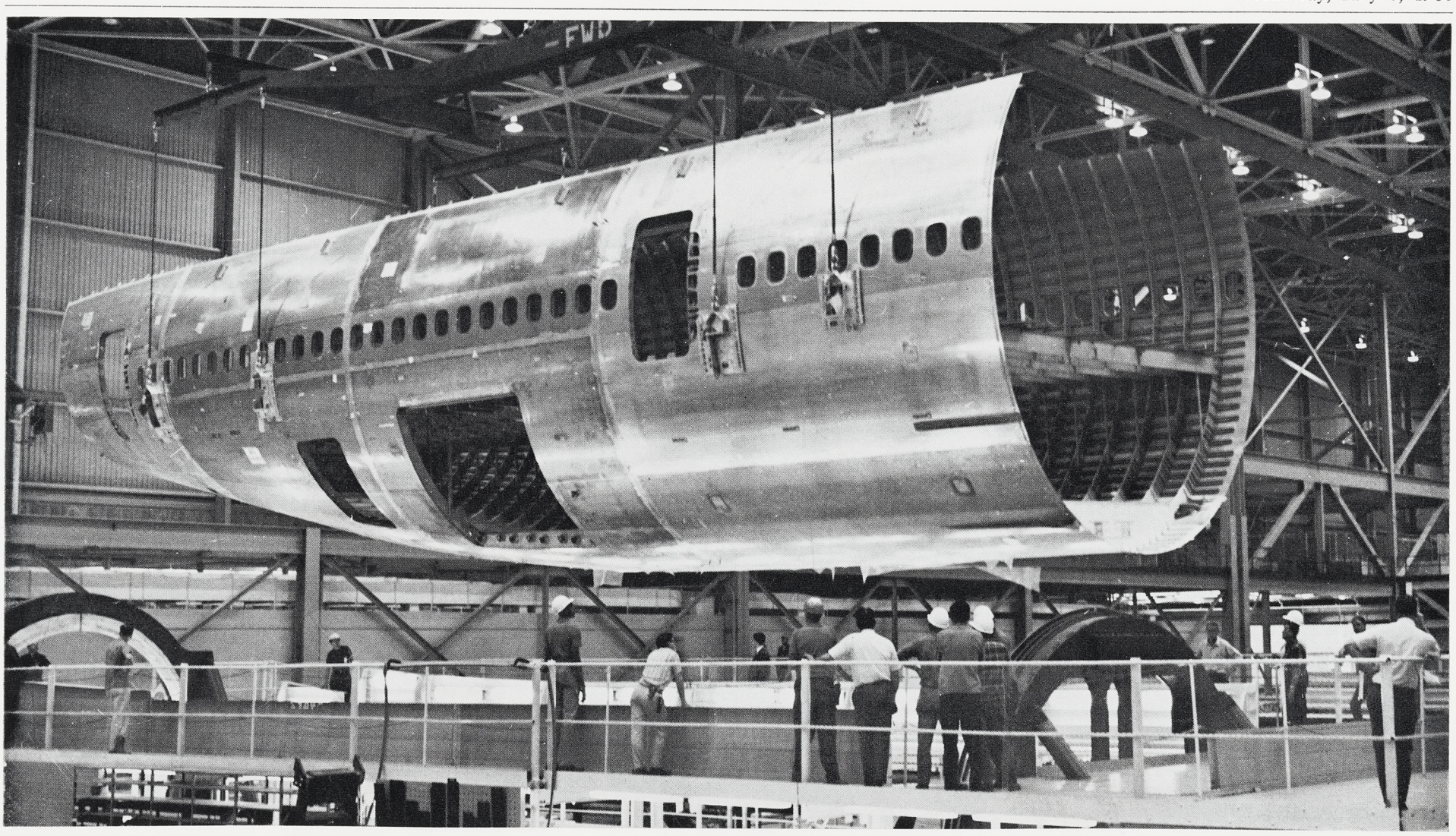
The Northrop Systems Laboratories personnel working side by side with JPL engineers on the thermal control model are the Temperature Control group. They are supervised by Costy Cafaro, and have been participating in all aspects of the conceptual design, thermal analysis, development testing and documentation of the temperature control subsystem of the Mariner '69.

In simplification, this subsystem, through its multifunctions, will be the Mariner's thermostat. It will maintain temperature levels among the components to insure high mission reliability.

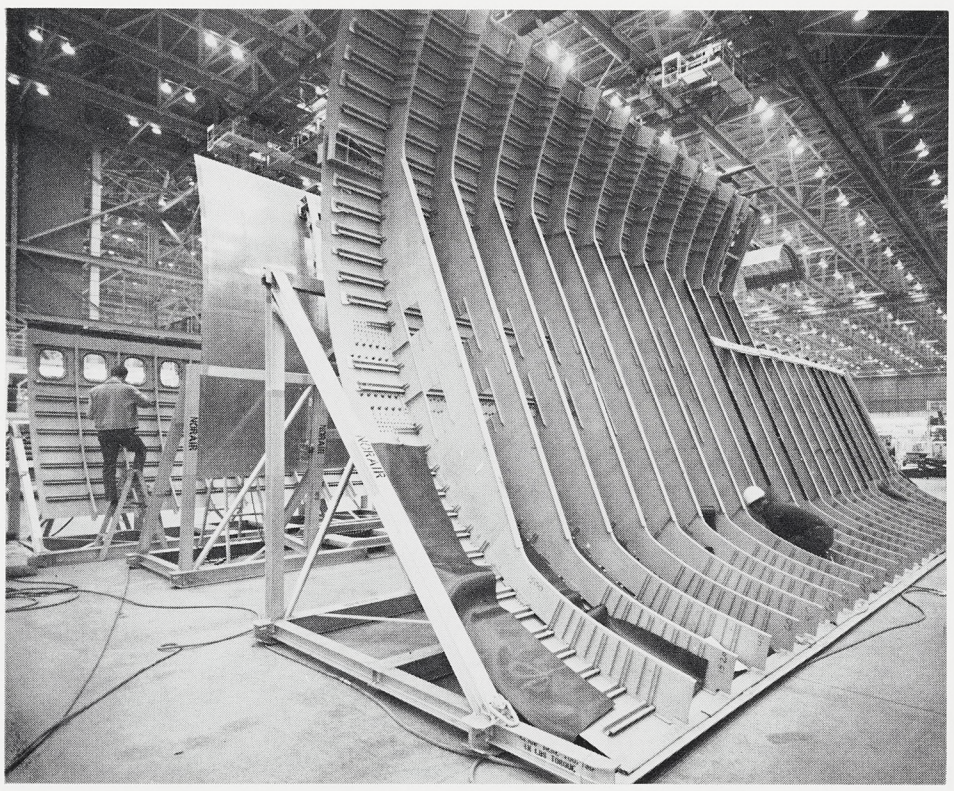
(See MARINER, page 6)

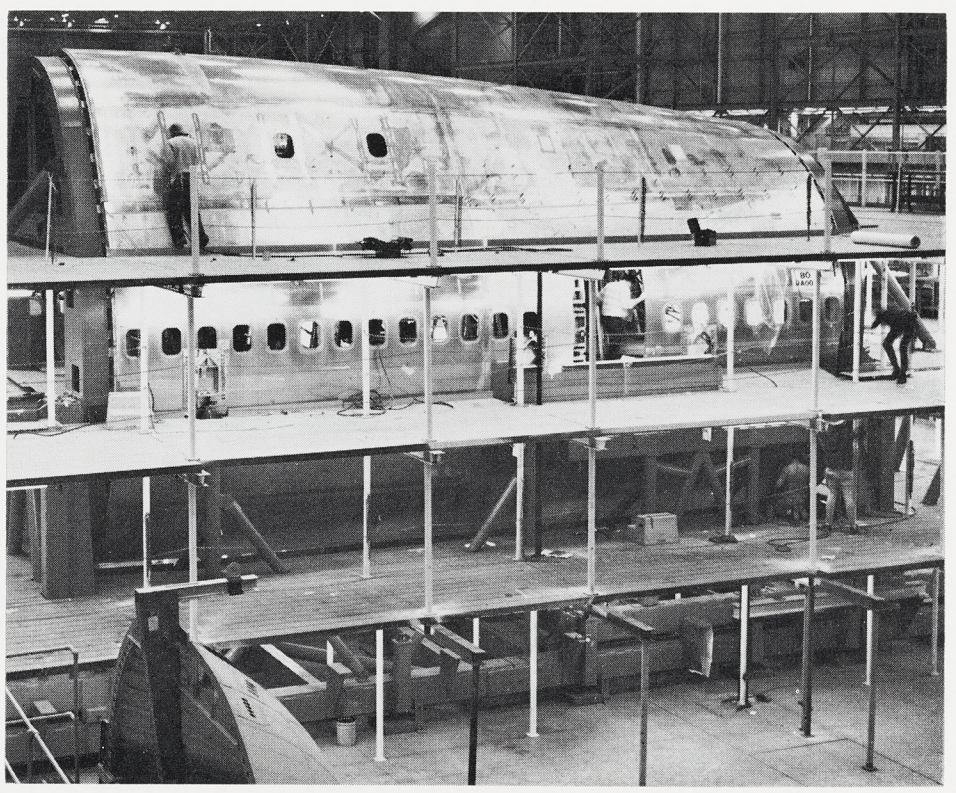


THE MARINER THERMAL TEST MODEL has already provided adequate correlation of thermal analysis when tested under thermal vacuum conditions using a solar simulator. Heaters were used to simulate electronic power dissipation in the spacecraft. With the model is Costy Cafaro, Nortronics engineering supervisor of the Temperature Control unit at JPL.



The Giant 747 Jetliner Takes Shape at Boeing





IT'S UPSIDE DOWN—This 73-foot rear fuselage lower section (top photo) is assembled upside down, then rotated 180 degrees and loaded back into the jig for installation of upper bonnet assemblies. In the lower photo at left, Section 46 is being sent to Boeing in shipping fixtures such as this. When assembled, the aft fuselage section contains the aft cargo areas and passenger doors. In the photo at right, workmen add the finishing touches to the three-story high Section 42, which comprises the upper deck compartment, forward end of the passenger cabin and forward cargo area. Northrop is building a 153-foot fuselage section.

Retirement Club Schedules Reunion, Disneyland Visit

The Northrop Retirement Club has two big events on tap during May.

May 15 will find retirees from all divisions gathering at the Alondra Club, Lawndale, for annual reunion festivities.

And on May 25, retired employees and their spouses will join Northrop's annual Night at Disneyland via chartered bus. Buses to Disneyland will depart the parking lot at Crenshaw Boulevard and 120th Street at 6:30 p.m.

The Alondra Club will be open at 3 p.m. May 15 for registration and games. A buffet dinner will be served at 6. Guest speaker is William Larrabee, retired Northrop vice president-Industrial Relations.

Reservations for both events are being accepted by Club officers. Retirees who are not active participants in Club activities may contact Personnel Activities at Norair, ext. 2486, for further information.

Caribbean Meeting Set

The final organizational meeting for Northrop employees and family members interested in a Northrop Travel Club tour to the Caribbean will be held at 8 p.m. May 17 in Room 4, Hawthorne Airport Building.

The cost is $666 per person. Brochures are available through Personnel Activities outlets.

Former Employees Sought by Company

Seven former Northrop employees are due for a pleasant surprise—if someone knows how to reach them.

Personnel in Northrop's Retirement Administration are trying to contact the former employees to inform them of their vested retirement rights and amounts in the Retirement Plan.

The "missing" former employees are D. J. Burtch, D. W. Callard, G. W. Christensen, V. E. Cull, C. A. Ferguson, R. B. Hughes and J. A. Lyles.

Persons who may know how to contact any of those seven have been asked to call the Retirement Administration on extension 302 in the Century City office.

THREE OUTINGS

Mountaineers To Be Busy

Trips into the High Sierras, the Redwood National Parks and the Angeles Crest Forest have been scheduled for this month by the Northrop Mountaineers Club.

Ken Ferrell, club commissioner, said all three trips are open to Northrop employees, whether or not they are members of the group. Additional information may be obtained by contacting him on Norair ext. 2001.

The Mountaineers will climb Olancha Peak in the High Sierras on May 18 and 19. They'll backpack from the Jordan Pack Station on Saturday, then climb to the 12,135-foot peak on Sunday. Lugged sole boots will be required. Information may be obtained from Glenn Lougee on 805-944-1752 or Dave Hodgon on 291-1255.

The group will hold a beginners' climb on May 25, climbing to the peak of 9,400-foot Mt. Baden-Powell in the Angeles Crest Forest. Coordinators are Ben and Miriam Romero, at 249-1564.

The club will take part in a five-day trip to Northern California from May 29 through June 2, camping for two nights at Patrick's Point State Park and one night at Richardson Grove. Bus reservations are $33 for the round trip. Reservations must be made by May 20.

The leader is Ed Ostrenga, on 878-3320.

John Movius Selected for Sloan Study

John D. Movius, a regional director in Northrop's Washington office, has been selected as a Stanford Sloan fellow for the 1968-69 program.

Mr. Movius

Mr. Movius was nominated by Northrop President Thomas V. Jones as the company's candidate for this nine-month intensive study program, which is intended to provide new knowledge in business and assist in the development of advanced management skills and techniques.

Mr. Movius will be enrolled at Stanford in September.

Each year the Stanford University Graduate School of Business selects approximately 30 fellows from industry and government to attend the Sloan program.

The Stanford Sloan program is one of several used by Northrop Corporation as a part of its program for Management Development.

Mr. Movius joined Northrop in September 1963, and has been assigned to the Washington office since that time.

NRC Clubs Schedule June 'Fiesta' Dance

Northrop Recreation Clubs serving Hawthorne complex personnel have booked the Mayflower Ballroom, Inglewood, for a June 15 "Fiesta" dance.

This first NRC dance of the year will feature Jimmy Talbert and his orchestra. A social hour will begin at 8:30 p.m. Dancing will follow from 9:30 p.m. to 1:30 a.m.

Tickets, at $1.50 per person, are available through Personnel Activities outlets.

SHATTERED GLASSES — Richard Fisher, a jig builder at Northrop Norair, shows fellow employees the safety glasses he was wearing during a recent mishap. Mr. Fisher was operating a drill when a bit broke, and the broken piece of metal struck Mr. Fisher's glasses. He was not injured. With him are Troy Click (left), safety committeeman, and Supervisor H. L. Tennyson. The incident qualified Mr. Fisher for membership in the "Wise Owl" Club, an honorary group comprised of workers who have prevented eye injury by wearing safety glasses on the job.

HIGH-ALTITUDE ENTERTAINMENT — A proposed passenger entertainment system designed for the Boeing 747 jetliner is shown here in an interior mockup of the 625-mile-an-hour jet. The picture shows a wide-screen presentation in the first class section. Northrop is building a 153-foot fuselage section, wing fairings, stringers and other parts for the jetliner.

Elmer Noonan To Address AMA Meet

Nortronics' director of Industrial Relations will be featured as a discussion leader at an American Management Association meeting in Los Angeles next week.

Elmer Noonan will lead the workshop seminar dealing with "Wage and Salary Administration for Sound Company Operations."

Mr. Noonan

The three-day discussion meetings will examine the basic elements of a modern wage/salary program, with emphasis on establishing measurable objectives. In addition to exchanges of ideas in virtually every wage/salary category, special attention will be given to the specific compensation needs of various employee groups.

Along with this special attention area, Mr. Noonan will guide the seminar discussions in other distinct directions: (1) assurance that wage and salary administration programs are up-to-date; (2) surveys and pricing jobs; and (3) day-to-day administration.

'2001' Tickets on Sale

Discount tickets for the 5 p.m. June 15 showing of the Cinerama film "2001:A Space Odyssey" at the Warner Hollywood Theatre, Hollywood, are available at Northrop Personnel Activities outlets.

Regular $3 loge and orchestra seats are available for $2.40 each for this Northrop theatre party.

'Desert Classic' Planned

The Norair Golf Association's annual Desert Classic is set for June 1 and 2 at Palm Desert.

Play will be over the Indian Wells and Bermuda Dunes courses. The cost for a golfer and non-playing guest is $46.96; for a single golfer, $34.48.

'THE HEAD SAM' is a term applied to Dan Gravlin by the 13 other members of the Palos Verdes Maintenance and Construction department which he supervises. Mr. Gravlin, a Northrop employee for 18 years, was presented a trophy by the other "Sams" in the office on his 65th birthday last month. No one knows why, but for the past five years, everyone in the department has called his fellow employee "Sam"—including the secretary, Bella Nix, the only lady in the office.

Fast-Growing Palm Labeled 'Voodoo Plant'

Speculation has ended. Jane McAleney's secret is known. That "what's-it" is really a voodoo plant.

Mrs. McAleney has enjoyed the suspense.

For seven years (she is an 11-year Northrop veteran) she has relished working as a Norair Research Laboratories assistant. She finds her friends there friendly and outgoing, curious by nature, methodical by profession, capable of rising quickly to the challenge of the unknown.

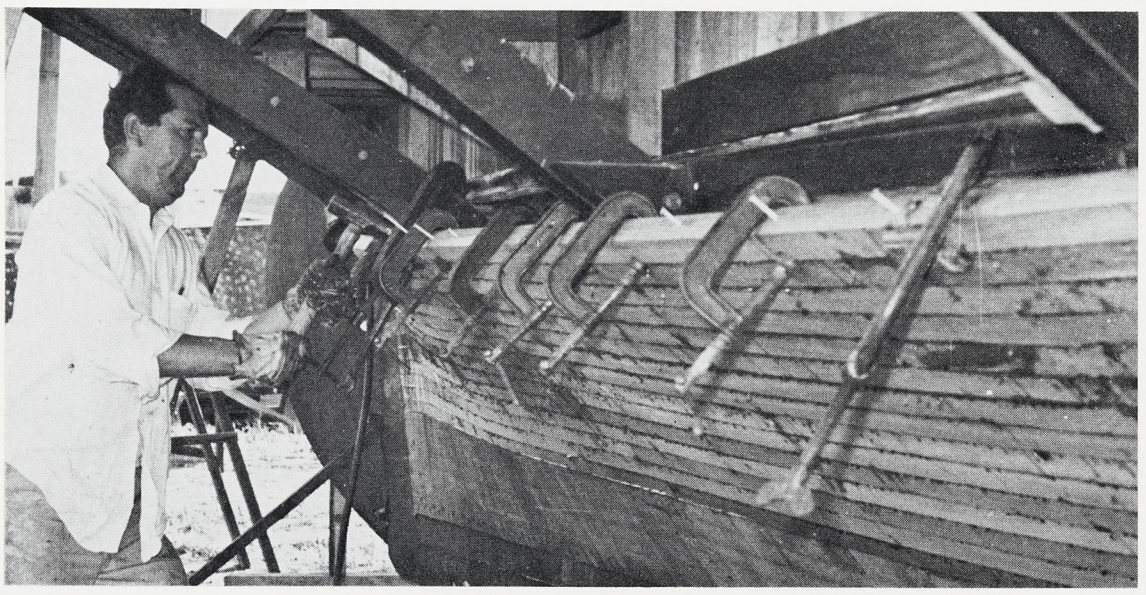
As an orchid-growing hobbyist, she appreciated their attention to a group project, a potted avocado seed that sprouted luxurious foliage.

Mrs. McAleney shared their concern when it died and disliked the now-vacant planter. She planted radish seeds in it. Nothing happened.

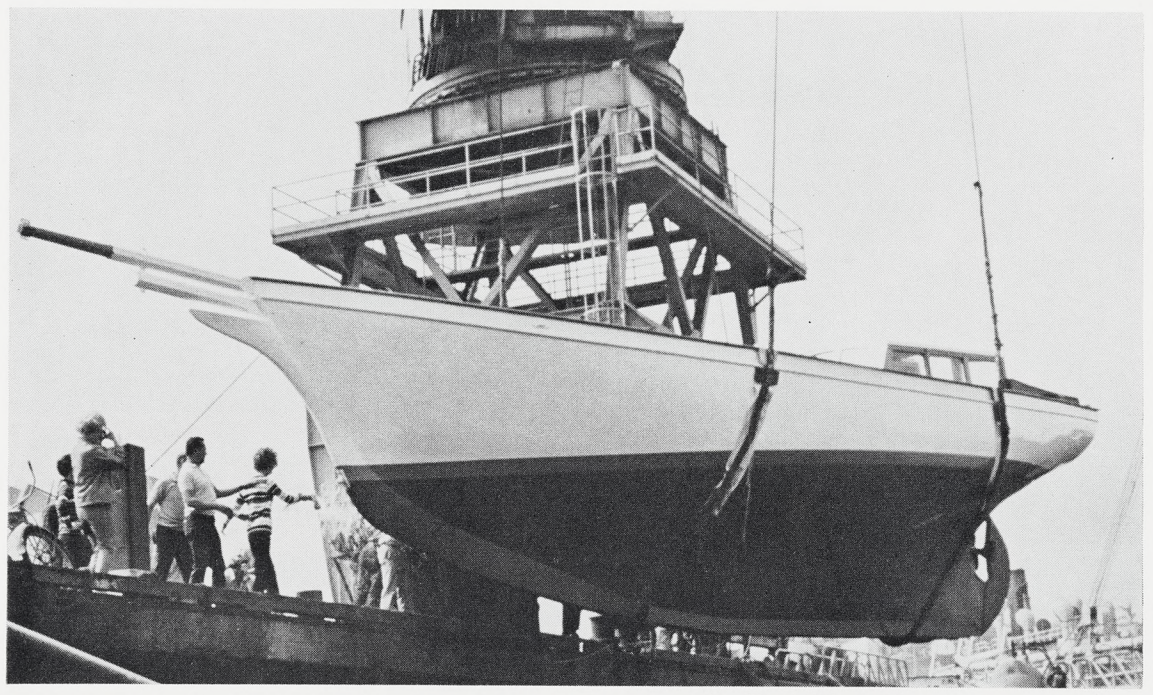
She brought from home a small bulb, secretly planted it, watered it, and went her way. Things happened fast. In two days it grew two inches. In 14 days it climbed upward more than 36 inches and sprouted leaves. Speculation increased each day.

Some called the palm-like plant an iris. Others said it was a leopard plant, because of the stalk colors. One wag dubbed it an "Ultra Gigantus Weedorus Gloris."

VOODOO PLANT? Right, or at least that's what Jane McAleney chooses to call the fast-growing plant which she "installed" recently in a planter in the Norair Research Laboratories. It climbed upward more than 36 inches in the first two weeks after it was planted. The plant caused much speculation among fellow employees as it grew at such a fast rate.

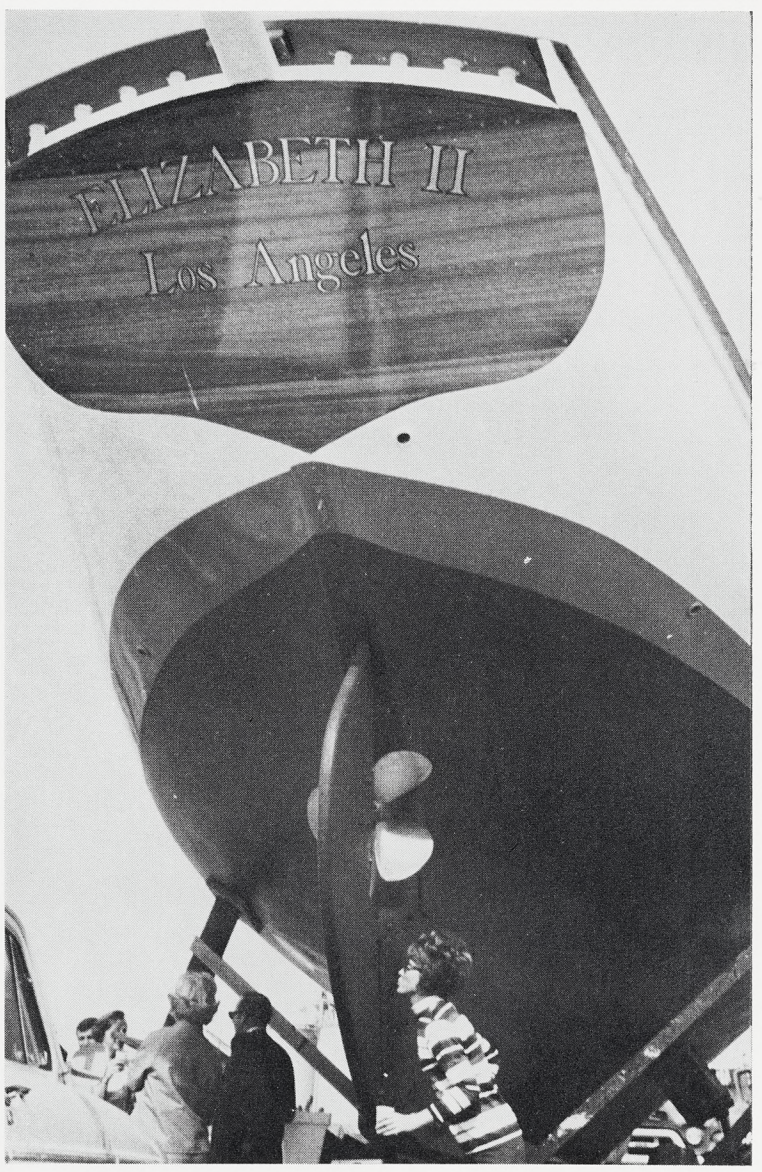


The captain of the schooner planking his hull.



Elizabeth I, 120 pounds, christens Elizabeth II, 23 tons.

"It floats!," cries the first mate from the bow.



Sanded, painted, varnished, kissed.

Photos by Bob Elliott,
Diane Young and Herb Turner

Down to the sea with their ship.

NORTRONICS' BOB CLAY

A 52-Foot Ultimate Do-It-Yourself Project

If there were one project to which you would devote your every free moment, what would it be? And, would doing this one thing to the exclusion of all else be worthy of the sacrifice?

These are questions that Bob Clay, supervisor of Business Systems Development at Nortronics Hawthorne, had to answer back in 1963. It was then that he made the decision to dedicate himself to the building of a boat; a job that he figured "would take me about three years."

Now, Bob and his wife Liz, also a Nortronics employee, look at the 52-foot staysail schooner Elizabeth II, with its 14½-foot beam, and agree the long labor of love was worth the price.

"In fact," Bob says, just out of earshot of Liz, "I'd love to build another . . . but not soon."

The most recent episode in the saga of Bob's big boat came early in the morning of last March 22, when 13 dockhands at Todd Shipyards in San Pedro gently hoisted the hand-made vessel with a 50-ton crane and lowered the hard-won prize into the water for the first time, just over five years since the laying of the keel.

It all started back in the early 50's when Bob took a correspondence course in yacht design. Then his dream was born. Soon after he married Liz, a native of DeQueen, Arkansas, who had hardly been near water, he looked at her and suggested, "since we aren't doing anything much on weekends, why not build a boat?" At that moment, their lives began to change.

By the time the keel was laid, Liz realized how the next years of their lives would be spent. "We survived this project," she said, "because we did it as a family. Any other attitude would have been impossible."

They also added to their family while they added to the boat. Robbie, now 6, got a playmate

(See CLAY'S BOAT, page 5)

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Mustang, 1967 Fastback, 390 cu. in., 4-spd., p/s, p/disc brakes, $2,500. 213-325-7351. A

Thunderbird, 1967, 4-dr., p/b, p/s, a/c, $3,900. 213-582-9369, 213-585-1361. A

Plymouth, 1964 Valiant convt., 4-spd. trans., r/h, tonneau cover, $850. 213-374-2756. A

Cadillac, 1957 sedan DeVille, full power, fact. air cond., $150. 213-679-3889. A

Grand Prix, 1964, p/s, p/b, new wide oval tires, $1,395. 213-323-7305. A

Chevrolet, 1964, Impala S.S., r/h, p/s, p/b, $1,250. 213-676-6730. A

Station Wagon, 1962 Falcon deluxe, 4-dr., auto. trans., r/h, new tires, brakes, $700. 213-377-8731. A

Chevrolet, 1961 Impala, p/s, p/b, 5 new Atlas tires, $500. 213-644-2717. A

Chevrolet, 1955 Nomad, 283 4-bbl., stick shift, $400. 213-329-9484. A

Station Wagon, 1962 Rambler, 9-pass., fully equipped, $395. 213-372-9706. A

Comet, 1964 Caliente, r/h, p/s, auto. trans., $750. 213-671-1490. A

Station Wagon, 1962 Ford Country Squire, r/h, a/c, p/s, p/b, new 390 eng., new trans. & brakes, $750. 714-838-4903. A

Mustang, 1966, V-8, p/s, auto., r/h, h/top, $2,000. 714-968-2623. A

Chevrolet, 1961 Impala, new paint, $750. 213-378-1402. A

Austin Healey, 1966 Sprite MK III roadster, fully equipped, $1,380. 213-831-9545. A

Truck, 1950 Chev. ¾-ton, '55 6-cyl., 4-spd. trans., w/cabover camper, $550. 213-374-5792. A

Pontiac, 1965 Tempest Le Mans 8 spt. cpe., 38,000 mi., new tires & batt., r/h, $1,725. 213-644-1572. A

Volkswagen, 1966 1600 Variant Squareback, radio, w/w tires, roof-type luggage carrier, $1,900. 213-788-4548. A

Chevy II, 1966 Nova, V-8, 4-spd., $1,795. 213-862-3027. A

Cougar, 1967 GT, p/s, a/c, stereo tape, p/disc brakes, $3,200. 714-838-8795. A

Cadillac, 1956, $150. 213-370-2214. A

Chevrolet, 1957 Nomad, p/s, p/b, flr. shift, tach., chrome whls., new brakes & clutch, $645. 213-325-8478. A

Chrysler, 1965 300L 2-dr. h/top cpe., AM-FM radio, p/s, p/b, 35,000 miles, $2,300. 213-374-0504. A

Cadillac, 1961 Fleetwood, fact. air, all power, $895. 213-353-9337. A

Ford, V-8, 1957, rebuilt 312 eng., $150. 213-679-4464. A

Chevrolet, 1959 Impala, r/h, 283 eng., $285. 213-545-6233. A

Comet, 1962 4-dr., stick shift, $495. 714-532-1510. A

Chevrolet, 1966 Impala S.S., fact. air, new tires, r/h, auto., console, 327 eng., $2,700. 213-823-3290. A

Pontiac, 1966 Bonneville, a/c, wire whls., radio, full power, $2,495. 213-328-5339. A

Mustang, 1966 convt., wire whls., a/c, new brakes, $1,900. 213-478-1051. A

Corvette, 1958, auto., new eng., $1,600. 714-525-0863. A

Corvair, 1960, $150. 213-376-4831. A

Chevrolet, 1963 Impala, 4-dr. h/top, p/s, r/h, 5 new tires, $1,000. 213-830-4745. A

Ford, 1955 V-8, tudor, auto., new brakes, $150. 213-370-5423. A

Truck, 1957 Dodge, ½-ton, 3-spd., $350. 213-423-4024. A

Thunderbird, 1964 h/top, full power, take over $86.17 mo. pymts., $1,771 bal. 714-774-7297. A

Volkswagen, 1964 2-dr. sedan, w/w, $1,100. 213-644-3024. A

Volkswagen, 1966, radio, new tire chains, 1300 eng., $1,450. 714-539-7675. A

Camper, 1965 Volkswagen, awning w/sides, ice box, stove, water tank, $1,895. 714-962-1805. A

Volkswagen, 1966 sedan, AM-FM radio, htr., $1,395. 805-495-5324. A

Chevrolet, 1967 Impala S.S., console shift, 4,000 mi., p/s, r/h, $2,500. 213-532-7634. A

Shelby, 1967 GT 500, auto., 11,000 miles, $3,900. 213-675-1365. A

Chevrolet, 1964 Impala, 4-dr. h/top, fact. air, 327 V-8, auto., p/s, many extras, $1,595. 213-327-2279. A

Station Wagon, 1956 Ford, $100. 213-596-8236. A

Triumph, 1965 Spitfire MK II, $1,500. 213-470-4475. A

Chevelle, 1964 Malibu S.S., convt., $1,350. 213-823-2784. A

Ford, 1964 Galaxie 500, 427 cu. in., 425 h.p., 4-spd., many extras, $1,000. 213-941-1769. A

Automobiles For Sale

Chevrolet, 1962 Impala, 2-dr. h/top, $875. 213-755-1071. A

Truck, 1953 Chev. ½-ton, $350. 213-325-7605. A

Chevrolet, 1959 Impala, 2-dr. h/top, V-8, new auto., $395. 213-327-2447. A

Sunbeam Alpine, 1962 convt., r/h, new trans., eng. & tires, tonneau, $500. 213-830-2778. A

Plymouth, 1965 Belvedere II, 361, 4-spd., mags., $1,395. 213-424-5992. A

Oldsmobile, 1963 F-85, p/b, p/s, radio, Double Eagle tires, $800. 213-343-7880. A

Barracuda, 1967, V-8, auto. trans., p/s, a/c, r/h, other extras, $2,450. 213-679-0809. A

Corvair Monza, 1963 Spyder convt., r/h, $525. 213-329-2926. A

Household Items For Sale

Washing Machine, Maytag, deluxe model, $75. 213-754-9889. B

Washing Machine, G.E., $20. 213-393-2373. B

Couch, Hide-A-Way, white Naugahyde, $30. 213-675-3098. B

Stove, O'Keefe & Merritt, $35. 213-677-3471. B

Stove, O'Keefe & Merritt, sep. broiler & oven, $50. 213-677-6375. B

Sofa-Sleeper, corner group, avocado tweed, $100. 213-675-3645. B

Refrigerator, Frigidaire, apt. size, $20. 213-329-1905. B

Chandelier, ruby glass Victorian w/crystal prisms, $35. 213-320-3529. B

Twin Beds, 2 Hollywood, $50 or $30 ea. 213-327-6849. B

Studio Couch, makes into dble. or twin beds, brown floral reversible cushion & bolsters, $15. 213-675-2005. B

Chest-of-Drawers, Salem maple, high boy, dust liners between drawers, $20, other items, various prices, 213-675-5522. B

Garbage Disposal, Waste King, $5. 213-675-8813. B

Crib, walnut, $30. 213-835-3869. B

Dinette Set, table w/1 leaf, off-white formica, 4 chairs, gold Naugahyde, swivel type, $60. 714-871-7625. B

Range, gas, 40" Kenmore, 4-burner, $35. 213-323-1698. B

Dining Room Set, 3 12" ext. leaves, 6 chairs, 2 corner hutches, $125. 213-676-3459. B

Hide-A-Bed, Lawson, teal blue, $35. 213-371-6758. B

Miscellaneous For Sale

Camper, 8½' Kamp King cabover, stove, oven, ice box, king size bed, 12V/115V, $700. 213-865-3108. C

Ice Skates, men's figure, size 9, used once, $7.50. 213-375-7265. C

Acreage, 9/10-acre, improved, Lake Los Angeles, $2,000 equity, take over $44 mo. pymts., $6,000. 213-672-4450. C

Home, 5 rooms, furn., landscaped, inc. patio, 2¼-acre, $14,500. 213-376-4787. C

Motorcycle, 1956 Aerial, $175. 213-391-8072. C

Guitar, Gibson, elec., hard case, amp., speaker, $265. 213-395-5649. C

Patio Cover, all metal, screened, 2 doors, 14'x32', $125. 213-928-2257. C

TV, Packard Bell console, 21", blonde, $25. 213-534-2419. C

TV, 21" maple console, $35. 714-523-0995. C

Surfboard, 9' 10", hi-performance skag, $75. 213-325-5875. C

Books, Detective Book Club, $2.50 ea., other books, various prices. 213-674-1847. C

House, 3-bdrm., den, fireplace, 2 baths, gar., $23,000. 714-826-0507. C

House, 4-bdrm., shake roof, block wall, encl. patio, bltin barbeque, fireplace, elec. kitchen, $28,000. 213-320-6975. C

Poodles, toy, AKC reg., 4 females, 2 males, $70 to $125. 213-635-2648. C

Boat, fiberglass Catamaran, 75 h.p. Evinrude, American tilt trailer, 3 new 6-ply tires, $1,195. 213-676-7109. C

Camper, for El Camino, cabover, sleeps 4, 75 lb. ice box, $495. 714-633-4656. C

Tape Recorder, Akaii, stereo, model M-8, 4-track, 4-spd., 22 rolls of tape, $300. 213-675-5001. C

Lot, ½ acre, bldg. site in Agoura, horses ok, city water, elect. & phones, $8,500. 213-783-8271. C

TV, 12" G.E., portable, $20. 213-326-5979. C

Train Layout, H.O., approx. 60 misc. cars, 5 engs., many extras, mounted on 4'x10' panel, $110. 213-291-0025. C

TV-Stereo comb., 23" Packard Bell, lime oak, b&w, $100. 213-323-3675. C

Typewriter, portable, Smith Corona, $19.50. 213-378-1863. C

Lawnmower, 17" Craftsman, hand-reel, grass catcher inc. $15. 213-371-8304. C

Land, 130'x165' in Apple Valley near the Inn, $3,000. 213-676-5101. C

Power Mower, Craftsman, 18" reel-type, $50. 213-329-7447. C

Extension Ladder, 24', magnesium, $40. 805-498-3549. C

Guitar, bass, Gibson, hardshell case, bass amplifier, $150. 213-398-9211. C

Camper, Sears tent-trailer, $225. 213-431-7696. C

Motorcycle, 1949 Norton, 500 cc, single & spare motor w/new parts, $150. 213-423-3887. C

Miscellaneous For Sale

Home, 4-bdrm., 1¾ baths, new cpts., tile & paint, paneled living rm., fenced yd., sprinklers, dble. gar., FHA, $16,300. 805-948-1572. C

Bicycle, Schwinn 26" tandem, children's seats front & back, $60. 213-294-0541. C

Bicycle, girl's 26" w/basket, $10. 213-323-4209. C

Amplifier & Tuner, stereo, Heathkit Models AA-100 & AJ-41, $185. 213-434-7791. C

Movie Camera, Yashica 8 mm, zoom lens, $30. 213-329-0086. C

TV, 19" Sears, portable, b&w, $40. 213-672-2370. C

Wig, blonde human hair, med. length, $60. 213-662-1817. C

Bowling Balls, 16-lb. man & woman, $8 ea. 213-372-8019. C

Pups, AKC, dalmation, $75 & up. 213-830-0702. C

Home, 4-bdrm., 2 baths, family rm., cpts., dps., recently painted, $24,500. 714-962-5713. C

Piano, upright Stark, maple finish, $200. 213-375-0061. C

Amplifier, 30 W, stereo, Eico preamp, 2 speaker cabinets w/12" spkrs., tweeters & crossovers, $150. 213-399-8045. C

Scuba Gear, $75. 213-371-5123. A

Home, 4-bdrm., 2 baths, den, lge. lot, just refinished, West Garden Grove, $23,500. 213-596-4215. C

Motorcycle, 1965 FLH Harley Davidson, $1,400. 213-323-6366. C

Table Saw, Craftsman 8", ext. table, $45. 213-679-1606. C

Phonograph, port. stereo, twin det. speakers, many records, $50. 213-320-2827. C

Mower, Sears, reel-type, 2¼ h.p. motor, $45. 213-324-8618. C

Boat, 12', alum., 3 h.p. Johnson motor, oars & locks, $300. 213-598-3552. C

Lot, 60'x135', 200' el., 1 block from ocean, approved grading, pad, 2,000 sq. ft. bldg. plans, $19,500. 213-833-2512. C

Camper-Trailer, teardrop, kitchenette, sleeps 2, 7'x10' tent, 2 new 6-ply tires & tubes, $395. 213-371-9665. C

Machinist Tools, calipers, $1.50; carboloy bits, 20¢ ea., many others, various prices. 213-324-6748. C

Movie Light, Super 8, Bell & Howell, fits on top of movie camera, $10. 213-651-0445. C

Suitcases, 2 men's, tan leather, $25 ea. 213-379-9553. C

Extension Ladder, 14' aluminum, $6. 213-293-5993. C

Ski Boat, 16' custom-built Bristol, 75 h.p. Mercury, trailer, $1,400. 213-867-4342. C

Apt. Units, 2, on C-5 lot, in Long Beach, low down, $14,000. 213-371-6918. C

Pup, Labrador retriever, female, AKC, 16 mos. old, shots, $250. 213-675-3557. C

Stereo, RCA portable, 4-spd. phonograph w/det. speakers, $75. 213-756-3472. C

Amplifier, Scott 120 W, FM tuner, Wharf-Dale speaker cabinet, $800. 213-325-6890. C

Sailboat, 11' centerboard, all extras, $365. 213-325-4094. C

Golf Clubs, 1967 Palmer irons, 1-3 wedge, D3 swing wt., stiff shafts, $110. 213-634-8423. C

Acreage, 5 acres in Antelope Valley, $35 dn., $35 mo., 6% int., $3,500. 213-378-1026. C

Trailer, for carrying 2 motorcycles, new lights, $125. 213-867-1476. C

Typewriter, Royal manual, port., carrying case, elite type, 10" carriage, $25. 213-675-4752. C

Boat trailer tires, 3 General, 570/500-8, mounted on 4-hole whls., $15 ea. 213-325-2292. C

Aquarium, 8-gal. show tank, Dynaflow filter, other access., $15. 213-379-8888. C

Trailer, 4'x8', utility & 2" ball, $50. 213-631-6428. C

Binoculars, Leitz Trinovid 10x40, waterproof, hard leather case, $200. 213-379-3487. C

Lots, near East Fork, Lake Isabella, small down, $1,650 to $2,200. 213-323-4329. C

Fire Detection Alarm, never used, 8 units, EMDEKO Honeywell System, $100. 213-675-3948. C

Honda, 1966 305 Scrambler, $450. 213-325-1075. C

Camera, Mamiya/Sekor SLR f1.4, TL 1000, $180. 213-861-4798. C

Bicycle, 10-spd. Phillips, $25. 213-831-4586. C

Trailer, 28' Pacemaker, $600. 213-329-7218. C

Wig, human hair, med. auburn, $30. 213-676-7379. C

Tape Recorder, Webcor, 4-track, stereo, $75. 213-329-1705. C

Wood Lathe, 8-spd., motor, stand, access., $70. 213-944-5946. C

Acreage, 5 acres, 2 mi. from Lake Los Angeles, $400 dn., deed, releases, ½ oil & mineral rights, $5,400. 213-482-7031. C

Train Set, Lionel, Santa Fe diesel w/magna-traction, 6 auto. switches, approx. 100 pcs. track, many access., $40. 714-635-3315. C

Books, set of 27 Tom Swift, $18. 213-882-0761. C

Wig, strawberry blonde, European human hair, shoulder length, stand, $150. 213-675-5963. C

Tape Recorder, auto., 8 track, 4 spkrs., for auto., converter for home, 4 tapes, $100. 714-635-7494. C

Miscellaneous For Sale

Piano, baby grand, Emerson, mahogany finish, $490. 213-375-8778. C

Sailboat, 18' Catamaran, dac. main & jib, trailer, $800. 213-374-1133. C

Pipe Rack, overcab, for pickup, $5. 213-371-6775. C

Mobile Home, 20'x50' Flamingo, on landscaped lot, $9,000. 213-348-1053. C

Apt, 6 units, 5 mins. from Northrop, enc. gar., low dn., assume low interest loan, $54,000. 213-679-7963. C

Table Saw, mounted on wooden cabinet, $40. 213-325-3724. C

Power Mower, Briggs & Stratton motor, reel-type, $35. 213-676-2162. C

Kayak, 14', lightweight, $50. 213-372-3827. C

Transmission Cases, 2 for 1951 Chevrolet w/misc. gears, $10. 213-758-9182. C

House, 3-bdrm., 3 blks. to beach, cpts., dps., fenced, lge. fam. kitchen, bltins, 10 mins. to Nortronics, $26,950. 714-774-2779. C

Pup, basset, male, AKC reg., black-tan-white, 6 wks. old, $50. 213-322-0678. C

Lot, ½-acre, in Apple Valley, water meter, gas & electricity, $150 dn., $25 mo., $1,995. 328-7048. C

Cabin Cruiser, 27' Chris Craft, sleeps 4, s/s radio, completely equipped, $4,750. 213-329-3900. C

Wanted to Buy

Volkswagen Engine, 1961 or later, & trans., floorpan, or entire car. 213-322-7869. D

Spraying Equipment for auto painting, below $50 price range. 213-370-7092. D

Wheels, 16" from Chevrolet or Pontiac. 213-375-0449. D

Hardtop for 1957 T-Bird w/portholes. 213-294-2014. D

Free (To Be Given Away)

Pup, 8 mos. old, male, mixed, pred. terrier, to family w/children & fenced yd. 213-635-3056. F

Rentals Offered

Cabin, Green Valley Lake, $25 w/end; $45 wk. 213-324-0649. G

House, 3-bdrm., 3 blks. to beach, cpts., dps., bltins, pvt. patio, $230 mo. 213-378-0187. G

Cabin, A-frame, furn., sleeps 5, 40 miles west of Colorado Springs, close to stream & lake, $70 wk. 213-894-1937. G

Cabins, Lake Gregory & Crestline, sleep 6, make reservations for June-Sept., $25 w/ends; $60 wk. 213-391-2040. G

Cabin, Lake Arrowhead, 200 feet from lake, $100 wk. 213-375-2255. G

Cabin, Lake Arrowhead, near lake & village, fireplace, patio, $60 wk. 213-761-9645. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

House, 3-bdrm., unfurn., in Thousand Oaks, newly painted, cpts., dps., lge. fenced back yd., $160 mo. 213-372-1259. G

Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $20-$35 w/ends; $45-$75 wk. 213-754-5288. G

Rentals Wanted

Garage, in Lomita area, for car storage. Must have electricity avail. 213-325-4860. H

Rides and Riders

Rides Offered

7 a.m. — 3:42 p.m.

Hawthorne Blvd. & Del Amo Blvd. or 190th St., Torrance. Donald Batty, Norair ext. 1289, 2236, 213-371-0210.

8 a.m. — 4:45 p.m.

Edinger & Beach Blvd., Huntington Beach. Dale Ebersole, Nort. Haw. ext. 616, 617, 714-847-7345.

4:42 p.m. — 1:12 a.m.

Between 102nd St. & 104th St. on Yukon Ave., Inglewood. Prefer female driver, willing to pay, Dodie Lehde, Norair ext. 2184, 213-671-0342.

Rides Wanted

8 a.m. — 4:45 p.m.

Edinger & Beach Blvd., Huntington Beach. Dale Ebersole, Nort. Haw. ext. 616, 617, 714-847-7345.

Rentals Wanted

Ski Boat, 16'-18' for week of June 15 thru June 21, 75 h.p. plus. 213-397-4732. H

Apt, 1 or 2-bdrm., unfurn., for 1 month in June, between Del Amo & Norair, no children, up to $120. 213-329-4894. H

Personals

We wish to express our gratitude for the flowers, cards & kind expressions of sympathy in the loss of our wife & mother. TOM SMITH & SONS, TOM & DENNY. L

Your thoughtfulness meant so much. The finest gift was they who gave their time to wish me well on retirement, thank you. JAMES T. JOHNS. L

Thanks to all of you for your kindness, help & concernment at the loss of our son & brother. THE PIERCES. L

Flying to Mulege, Baja, Calif. May 23-26, room for 4 more persons, share expenses. 714-847-2648. L

Sincere thanks to the many friends & co-workers who made my retirement party & years at Northrop so enjoyable. Also, for the transceiver which will provide many happy hours. EDGAR A. FREITAS. L

For Sale or Trade

Pump, Hawthorne, elec., ⅓ h.p. w/filter attachment, suitable for 4' x 15' Doughboy swim pool, $30 or trade for ping pong table, folding type w/paddles & net. 714-534-6180. M

Home, stucco, in Inglewood, 3-bdrm., 2 baths, den, cpts., h/wood flrs., 2-car det. gar., patio, b/wall fence, $9,000 equity, $26,000 or trade for land or home in Malibu Canyon or Thousand Oaks area. 213-671-8401. M

Honda, 1967 305 Scrambler, 2500 mi., alloy front fender, $500 or trade for desert-ready Hodaka. 213-644-4289. M

Cadillac, 1967 convt., full power, AM-FM stereo radio, auto. htr. & air cond., $4,950 or consider transportation car in trade. 213-322-7158. M

Camper-Van 90, Chev., V-8, fact. installed camper unit, sleeps 2, hvy. duty equipped, $2,900 or trade for transportation car. 213-672-4231. M

Volkswagen, 1963 Westphalia camper-bus, $1,595 or trade for ski boat, 16' Glasspar w/75 h.p. eng. or equal. 213-321-4801. M

Bob Clay's Boat—52 Feet, 11,000 Hours, 23 Tons

(Continued from page 4)

in the Gardena shipyard when Chuck was born, two and one-half years ago.

At the end of five years labor, Bob and Liz have more than 11,000 man/woman hours invested into the effort.

Bob Elliott, close friend of the Clays, and a Norair Graphics coordinator, says: "It's one of the most fantastic projects I have ever witnessed." He lettered the transom and assisted occasionally in other construction but, in his words, "what little help I—or any others—gave was negligible. The project was truly a one-man endeavor."

Liz: "He's right, it is 99 per cent Bob's boat. Even after seeing it go up piece by piece, weekend by weekend, I still can't believe it."

"The biggest obstacle to overcome was the desire to join others in their boats on the weekends," says Bob, "but a weekend spent on another boat would have put us a week farther from our own."

The only setback of any significance came when Bob was transferred back east for three months one summer. Because of good weather and extra daylight working hours lost, this cost the Clays about a year.

A major assist to the project came when Hank Young, still another Nortronics employee, heard of a salvage operation being performed on the Island Girl, which had run aground off the Palos Verdes Peninsula. Bob got a "great buy" on valuable items from the wrecked schooner.

Other material used in the construction came from The Philippines, Africa, Burma and India. The 52-foot schooner will weigh 25 tons when fully outfitted and rigged.

Elizabeth II is unique for at least one other reason. It was built from the inside out. Most shipbuilders do the job in reverse.

Just a week ago, Bob made the 65-horsepower Hercules engine operational. By mid-summer, the Clay family hopes to be in permanent residence on board Elizabeth II.

The final phase toward Elizabeth II's becoming truly seaworthy will begin when the sails are delivered early next month. Then, Bob will step the 54-foot and 62-foot masts and complete the rigging.

Data Processing System Aids Financial Planning

A new data processing system called NIMROD — for Nortronics Integrated Management Reporting On Demand — is streamlining the forecasting of Nortronics business activity and advanced resource requirements.

Before Nortronics Financial Planning groups put the computer to work, Division Marketing must identify — which it does on a regular basis — the potential new business which Nortronics is pursuing and the probability that the division will capture it. It then becomes the job of Financial Planning to interpret this data into a financial plan. Using manual methods, only gross approximations could be made of the probable manpower and other resource requirements.

Here's the way the NIMROD system works:

It stores formulae and cost distribution percentages for various types of business in the computer. The data supplied by Marketing for each potential contract is fed to the computer. The computer then calculates the probable amount of factory labor, engineering labor, material, and overhead for each month of the contract. This data, summarized with other input describing current Nortronics contracts, provides a complete financial forecast for each of Nortronics' product lines.

Responsible for submission of this current contract data are the Financial Planning organizations in each of the departments. They are headed by Dick Taylor, Lee Wade, and Roy Graboff, chiefs of Financial Planning and Control at Anaheim, Hawthorne and Palos Verdes, respectively.

"This development is important to Nortronics," says Charles Fredericksen, director of Financial Planning and Control, "because it is the basis upon which we will expand our capability for effective computer utilization for budgeting, financial planning and cost control."

Instrumental in the implementation of the system has been John Simon, chief of Division Financial Planning, with the support of the chiefs of the Financial Planning and Control groups.

Bill Liska of Management Systems, reporting to Dick Shave, chief of the Management Systems group, has coordinated the system development with Northrop Data Processing and within Nortronics.

According to Don Lewis, vice president and manager of Nortronics Finance, the concepts initiated by Nortronics are now being built for this system into an even more versatile financial analysis system which will be used by all divisions of the corporation.

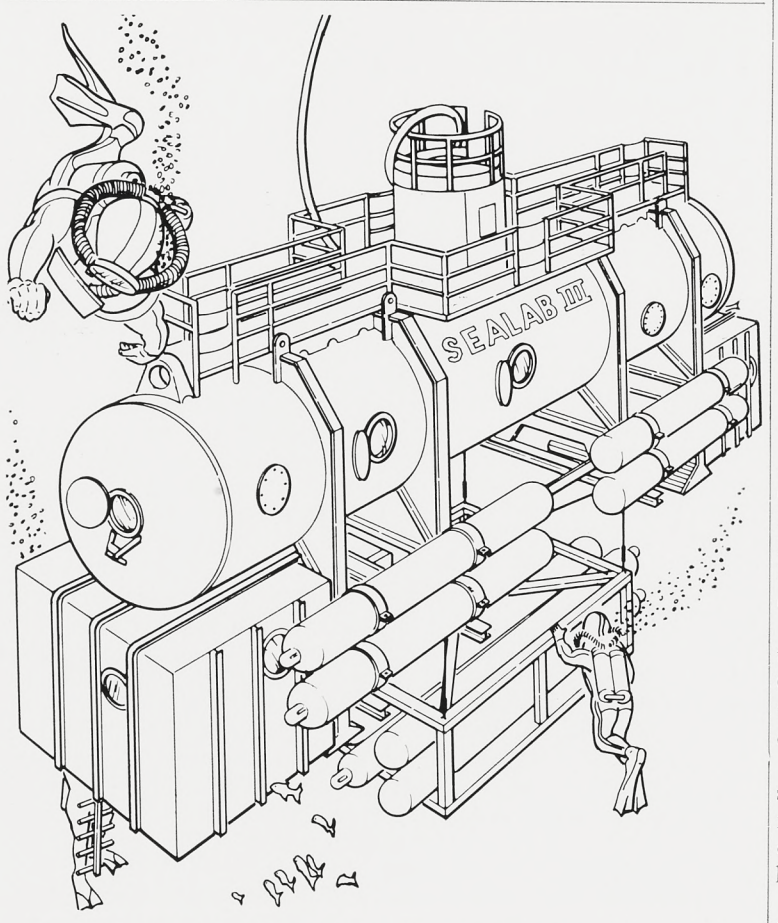
Armed Forces Study Group Schedules Visit

A field research group from the Industrial College of the Armed Forces will visit Nortronics Palos Verdes tomorrow afternoon to discuss the Deep Submergence Systems Project (DSSP).

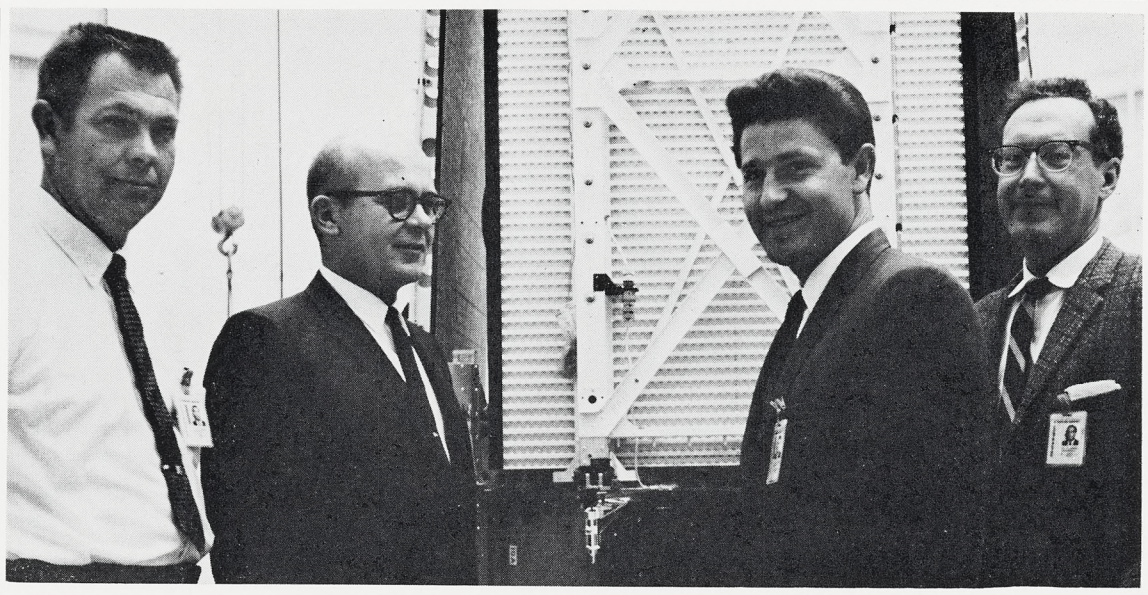
A group of 15 officers and two faculty advisors from the college will meet with George Mangurian, DSSP Program manager, to discuss the Nortronics relationship with the Navy in the management of the Navy's deep submergence projects.

As part of the curriculum at the college, the group is researching the subject of Management of Research and Development in the Department of Defense.

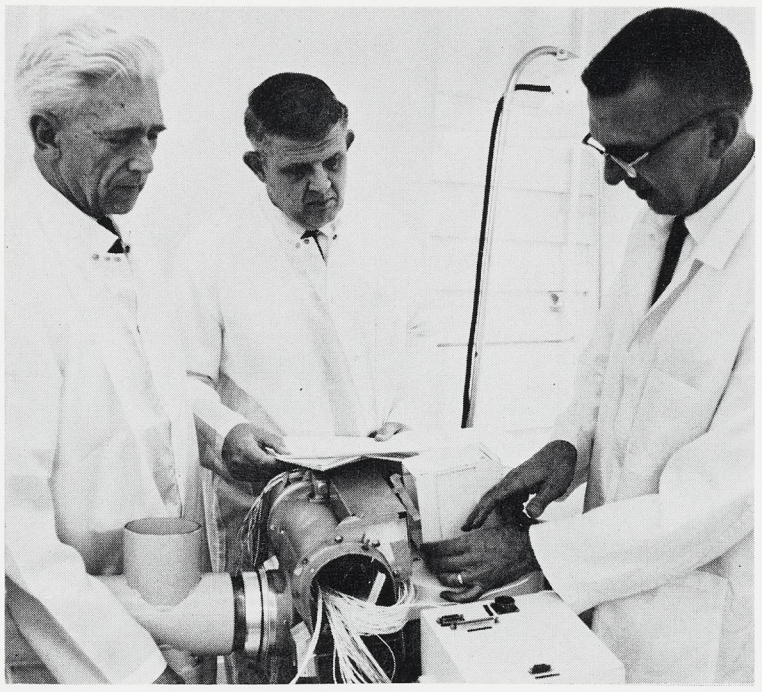
One of the projects that the group has selected, in order to follow management practices through actual cases, is the Navy's DSSP. The primary objective of the project is to gain a detailed understanding of the management of development, test and evaluation in the DOD.



THIS SEALAB III HABITAT will rest on a continental shelf under the waters off San Clemente Island when the first undersea experiments begin in connection with the U. S. Navy-Nortronics DSSP SEALAB III program. Aquanaut teams will live in the chamber for periods of up to two weeks, often leaving their temporary home for sorties to 600 feet.



THIS MARINER DEVELOPMENTAL TEST MODEL is being tested by a group headed by Bill Gaugh (right), supervisor of the Structural Analysis unit. Mr. Gaugh's MM '69 staff includes (from left) Bill Edwards, test engineer; and technicians Des Arthurs and Eldon Moulding. Mr. Gaugh and Mr. Arthurs recently presented a paper concerning their work to the Shock and Vibration Symposium in St. Louis, Missouri.



MARINER CABLING ENGINEERS check the mounting details on the science platform cabling fixture at JPL. They are (from left) Art Dugdale, engineer; Bill Janes, designer; and Vince Urban, group supervisor. All are members of the MM '69 Cable Engineering unit which has coordinated the harness installation on the test model spacecraft. Their work will continue through assembly of the first flight spacecraft.

MARINER

(Continued from page 1)

About 80 per cent of the thermal control model hardware was built at NSL in Hawthorne and assembled at JPL by NSL and JPL technicians.

Another Nortronics group, the Structural Analysis unit, under the supervision of Bill Gaugh, is involved with the support of spacecraft design decisions and structural analysis. Mr. Gaugh prepared a paper, along with Des Arthurs of Nortronics and Herb Holbeck of JPL, for presentation to the Shock and Vibration Symposium in St. Louis last week.

They have subjected the developmental test model to stringent structural and vibration tests, among others, and have found that the model will withstand stresses far beyond what will be demanded of it in space. In so doing, the unit has established the structural integrity of the spacecraft.

Nortronics mechanical technicians at JPL are performing fabrication and assembly of the proof test model and flight spacecraft and have supported the various test model operations.

In addition to initial support to JPL in planning and electrical design of all spacecraft equipment interconnect wiring, the NSL Cabling Engineering group, under the supervision of Vince Urban, has prepared the harness installation and mounting requirements.

Also, to supplement a nucleus of JPL personnel, NSL technicians have been performing the majority of wiring harness fabrication in the JPL Cabling Shop.

In addition to test craft and initial flight harnesses which have been delivered, the NSL technician team will continue to fabricate and modify the many detail cable harnesses required for installation on each flight spacecraft and adapter structure.

Two flight spacecraft are being assembled at JPL's Spacecraft Assembly Facility. When ready, they will be exposed to thermal-vacuum testing and to flight acceptance loads corresponding to the predicted maximums anticipated during launch and exit.

Meanwhile, the interest of the Mariner '69 team is hopefully focused on developments in the Mariner Mars '71 program, now awaiting Congressional approval.

Mariner Mars '71 — unlike its '69 predecessor — would not be a fly-by mission. It would be an orbiter, gathering valuable information in a series of complete orbits of the planet.

Registration Period Begins For Women's Golf League

Registrations are being accepted for the women's twilight golf league at Anaheim.

Play will begin on May 22, and will continue into fall on Wednesday evenings during the Daylight Saving Time period. First tee off time is 5:15 p.m. at the Brea Golf Course.

Green fees will be $1.50 per night, including prize money, and the first five weeks' fees of $7.50 must be paid in advance.

Registration deadline is May 17.

Further information and entry blanks are available by contacting Pat Richards, women's golf commissioner, on Anaheim ext. 1182.

JA Firm Plans 10 Per Cent Stock Dividend

The Orange County Junior Achievement Company (ORCO), counseled by Nortronics Anaheim, will hold its annual stockholders' liquidation meeting next Monday at 7 p.m. at the NRC clubhouse in Fullerton.

According to Bob Varner, Nortronics management advisor to ORCO, the achievers will distribute 10 per cent dividend checks to 108 stockholders.

A special award will be presented to the Junior Achievement company that has the highest stockholder attendance at the liquidation meeting.

The liquidation is a normal function of all JA companies. The achievers' business year ends along with the end of the school year. New achievers will organize a new company, and develop a new product, in the fall.

Rice, Four Others Star in Tournament

Results are in from the Nortronics El Rivino golf tournament played recently in Riverside.

From a field of 60 golfers, Dave Rice registered the best game gross with a 73, the lowest round of the day. Four others emerged as flight winners.

Jim Randazzo's 79 led first flight competitors, as he won easily over Al Christensen and Cliff Ross. Second flight honors went to Dana Vigo, for his 85, which edged out Dave Jenkins and Russ Munsen.

Winner of the third flight was Jim Mounts. He scored a 95 to win over Gordon Hughes and John Nakakihapa. Pat Angst won first position in flight four with a 98, defeating Len Kaufman and Joe Kubas.

NORTHROP NEWS

NORTHROP NORTRONICS

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A NEW COMPUTER SYSTEM designated RIPS, for Reliability Information Processing System, has been conceived and developed by Nortronics personnel (from left) Don Allyn, Business Systems engineer, Cornelius Ferguson, jr., senior reliability representative and Carl Derossett, senior programmer analyst. The new system, utilizing Northrop Data Processing's IBM 360 computer, will record data supplied from failure reports, providing the means for more efficient equipment monitoring.

Navigation Seminar Scheduled for June

Nortronics Will Host Officers, Civilian Officials at Hawthorne

A Navigation Systems Seminar, with the aim of supplying to the U. S. Army specific technical information is to be conducted June 4, 5 and 6 at the Navigation department in Hawthorne.

During the three-day event, Nortronics will host about 30 Army Officers and Department of Army civilians in an attempt to provide "an overview of navigation systems and equipment as a technology, and the relationship of these to solving the problems associated with accuracy and performance requirements."

Visitors are expected from the Army office of the chief of Research and Development; assistant chief of staff for Requirements; Combat Development Command; Aviation Command; Electronic Command; assistant chief of staff for Communications and Electronics; Army Materiel Command, and the Army Security Agency.

Key members of the Navigation department will present papers concerning the various types of pure and hybrid navigation systems, computers, analysis techniques, peripheral equipment, software, programming, concepts of augmentation and integration rationale.

Lloyd Jones, chief of Product Support, has been appointed seminar manager and will moderate discussions.

A portion of the seminar has been set aside for laboratory demonstrations.

Addition Makes Conveyor System Fully Automated

With the recent inclusion of the electrostatic paint booth in the monorail conveyor system, the Anaheim stringer process line has become fully automated.

Previously all electrostatic painting was done by hand.

The completed stringers are now loaded on racks suspended from an overhead transport system and move at a fixed speed through the required cleaning, deoxidizing, dye penetrant, conversion coating and electrostatic painting processes.

This development provides more uniform process control and eliminates stringer damage caused by manual handling in these final processing stages.

Reliability Aided By Nortronics Computer System

A recently developed computer system at Nortronics, called the Reliability Information Processing System (RIPS), is providing a new tool in solving the problems of Reliability.

Specifically, RIPS records data onto a data base of historical failures. The method and economy of retrieval and analysis of this data provides the means for a higher level of product confidence and more efficient monitoring. It also provides variability and flexibility without losing comprehension or simplicity.

The system was conceived by Cornelius Ferguson, jr., senior reliability representative.

Formal development, under the supervision of Don Allyn, Business Systems engineer, began in the fall of 1966 and actual programming started the following spring. It is being continued as a computer programming project, led by Carl Derossett, senior programmer analyst with Nor-

(See RELIABILITY, page 6)

June 4 Primary Nearing; Voters' Attention Urged

Northrop employees will be facing a number of tough decisions in the next two weeks.

That may not be anything new to a lot of people, but the Northrop News is urging fellow employees to give a little extra attention to the many issues and candidates with which members of all political parties will be faced on June 4, date of the California primary election.

Everyone who is registered, regardless of residence, will be voting for delegates to national conventions (Presidential nominations), U.S. Senators, Representatives to U.S. Congress, and members of state senate and assembly.

Remainder of the ballot will be devoted to local issues and will vary depending on the county of residence.

Those who neglected to register in time for the primary still will be able to vote in the general election November 5, providing they register between August 7 and September 12. Northrop is presently studying ways in which the company can help employees to register and to obtain information about the general election.

Polling places will look a little different this year in Los Angeles County as IBM Vote Recorder machines have replaced the old rubber stamp and ink pad. A ballot card and envelope will be handed you as you sign in at the precinct. Voters will punch the ballot card with a small stylus in the voting booth. Computers will do the counting this year.

For those who have moved recently and were not yet qualified to register, and for those who will be out of town, absentee ballots will be available until May 28 by writing to the County Registrar of Voters. They must be returned by 5 p.m., June 3.

Coughlin Earns 25-Year Pin

Nortronics' William Coughlin will receive this month his 25-year diamond service pin for a quarter-century of employment with Northrop.

Mr. Coughlin

Four others get 20-year awards and seven are up for 15-year pins.

Mr. Coughlin started with Northrop by stocking airplane parts and has been with Nortronics since the division's inception. He's leadman with the Data Control group in Configuration Management.

The four 20-year pins will go to Robert Bareford, a systems analyst with Nortronics' DSSP office in Washington; Donald Marden, a senior mechanical lead engineer in Mechanical Design at Hawthorne; Fred Nice, a senior engineer in the Precision Mechanical Development group at Hawthorne; and Bruce Vernier, general supervisor of Field Engineering assigned to Brown & Root-Northrop in Houston.

Robert Cobb and Benjamin Donnelly will receive 15-year service awards at Hawthorne. Similar awards go to Thomas Boswell, John Copeland, William Hantula, Roderick Mills and Robert Smith, all of Anaheim.

FRANCES BROWN

Women's Group Elects Anaheim Employee

A Nortronics woman is the newly elected president of the San Orco District of the California Federation of Business and Professional Women.

Frances Brown, a Support Requirements analyst at Anaheim, will fulfill a three-year executive commitment to the district BPW.

(See Photo, Page 4)

Her election as vice president this year leads to the post of president-elect next year in preparation for her tenure as president in 1970.

Mrs. Brown has been a Nortronics employee for 11 years and was an organizer and charter president of the Anaheim Nortronics Women's Club. When first coming to Northrop, she was in Industrial Relations.

In her present capacity, she expedites emergency requirements for Polaris spare parts checkout equipment. She also coordinates supply efforts between Nortronics and the Polaris fleet.

In her association with the BPW, she is currently membership chairman of the Fullerton Club, where she has been a member since 1960 and is a past president.

Mrs. Brown, a former professional model and occasional fashion commentator, has an associate degree in business administration from the University of Denver.

She has been married to a former Northrop employee, Ted Brown, for 23 years and lives in Fullerton.

Miller To Present Paper

A presentation on Program Technical Development and Contract Management will be delivered by Ross Miller, Nortronics vice president and Navigation department manager, to the American Management Association during the first week in June at San Francisco.

Mr. Miller's paper, "Total Package Procurement—Its Impact on Technical Program Management," will be part of the AMA's attempt to present the latest advances in program and project management techniques.

The course will be for those who have been recently assigned to, or who will be given in the near future, responsibility for managing a major program or project.

Speakers from government, industry and the military will discuss seven key areas of functional program management.

NRC To See '2001'

A second group of tickets has been obtained by NRC following sellout of initial quota for a 5 p.m. June 15 Northrop theatre party at the Warner Hollywood Theatre.

The feature film is "2001: A Space Odyssey."

Third Quarter Earnings Show 40 Per Cent Climb

Northrop Corporation recorded a 40 per cent increase in earnings for the third quarter ended April 30 over the same period of last year and a 28 per cent increase in earnings for the first nine months of the current fiscal year, compared with the same period a year ago, President Thomas V. Jones reported last week.

Earnings for the third quarter were $4,204,000, compared with $3,007,000 for the same period a year ago. Earnings for the first nine months were $10,746,000, compared with $8,402,000 for the same period of last year.

Per share earnings for three months were 89 cents per share on a weighted average of 4,535,293 common shares outstanding through April 30, compared with 67 cents per share earned on a weighted average of 4,236,759 shares for the prior year.

Per share earnings for nine months were $2.28, up from $1.94 for the same period a year ago.

Sales for the three months were $117,522,000, compared with $127,799,000 recorded a year ago. Sales for nine months were $349,326,000, up from $341,043,000 reported a year ago.

Backlog was up 23 per cent over a year ago, $752,525,000 compared with $612,920,000.

"Our third quarter earnings resulted from increased profitability across many of our programs and reflect the company's broadened diversification over the past several years," Mr. Jones said. "The results indicate that the full year will confirm our earlier forecast for sales somewhat above fiscal 1967 and earnings substantially higher than last year's."

Memorial Weekend Camping Trip Set

Northrop Wanderers will hold their annual Memorial Day weekend campout this year at Oak Springs Ranch, near Hemet.

The ranch provides electricity and water hookups, showers and restrooms, a clubhouse, swimming pool, hiking trails, horseback riding, large bore rifle range, trail bike roads and an abundance of shade trees.

Saturday night a "potluck" dinner, Hawaiian style, will be staged. Each family will bring a Polynesian or Cantonese dish. Costumes are invited and leis and orchids will be available.

Contact Ed Jaeger, Ext. 2075 at Norair, for information.

Tickets Available for Music Center Show

Discount tickets for four performances of "In the Matter of J. Robert Oppenheimer" at the Mark Taper Forum, Los Angeles Music Center, are available through Personnel Activities outlets.

Regular $6.30 tickets sell for $3.50.

Tickets are available for June 16, 23 and 30 and July 7. All performances start at 7:30 p.m.

This is the American premiere of "Oppenheimer," starring Joseph Wiseman and presented by the Center Theater Group.

Secretaries Attend National Convention

Two secretaries of top Northrop Corporation executives represented the company last week at the 21st annual convention of the Executive Secretaries, Inc.

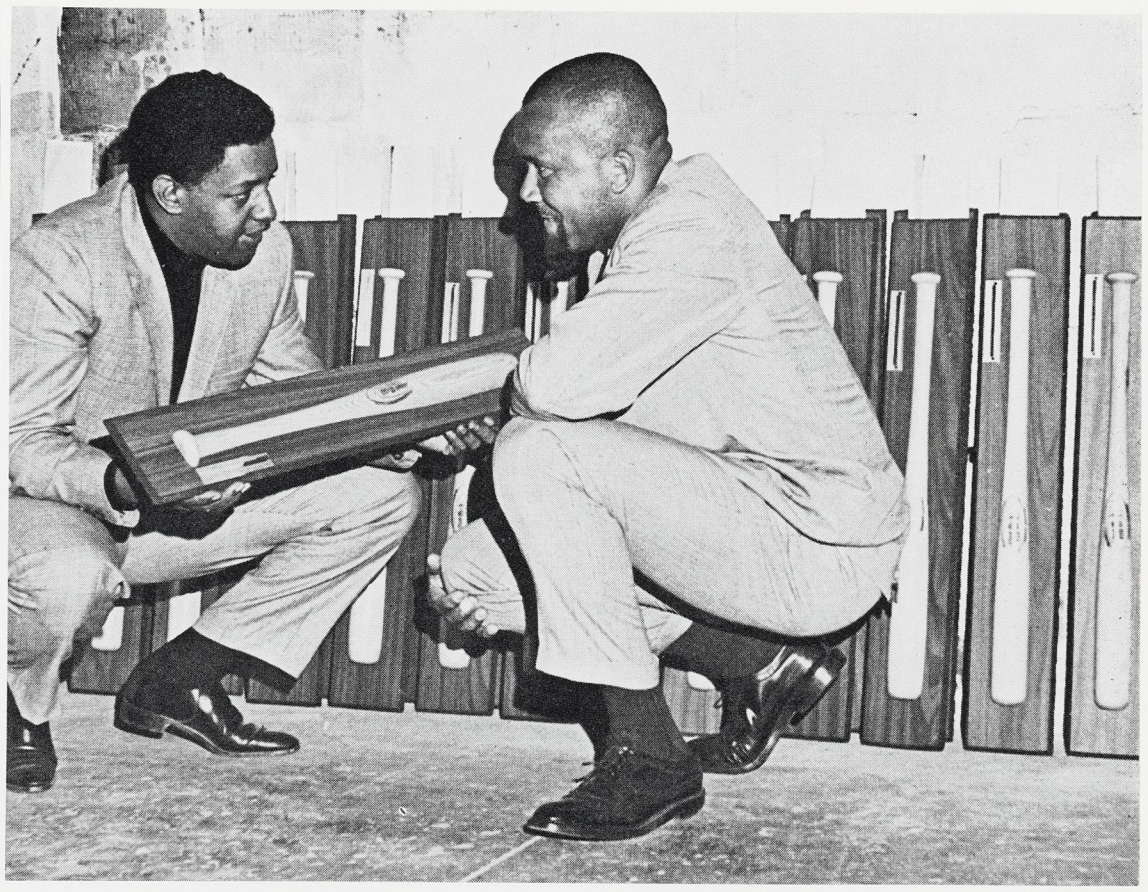
Evelyn Purpus, secretary to President Thomas V. Jones, and Irma Nikodem, secretary to Senior Vice President Robert R. Miller, attended the three-day convention in Los Angeles.

Mrs. Purpus became Northrop's representative to the group in 1954, and Mrs. Nikodem became an associate member two years later.

Chapter representatives from throughout the United States and Canada attended the meeting, which was highlighted on Saturday by a banquet at which Governor Ronald Reagan spoke.

Membership in Executive Secretaries is held by leading firms in each chapter city. Northrop has represented the aerospace industry in the Los Angeles Chapter since 1954. No more than 101 women may belong to each chapter, under the group's bylaws, and members must be secretaries to top company officials.

Northrop was one of the sponsors of this year's convention.



WATTS WALLOPER baseball bat plaques are the first product of the unique self-help, nonprofit Green Power Foundation. Its president is Norman Hodges (left), a chemist who has returned to South Los Angeles to head the drive to employ the "unemployables." Another of the 153 successful Negroes offering his direct personal assistance is Nortronics' Hollis Smith, a senior engineer in Advanced Avionics at Hawthorne. Soon, Watts Wallopers will be used in the majors. For now, plaques go to those who contribute $10 toward helping the foundation become self-sufficient. Northrop is among several companies which have assisted the Green Power Foundation in establishing the Watts Walloper enterprise.

ORDAP Concludes German Study

The successful conclusion by Northrop of a seven-year program to establish a modern military Operations Research capability in Germany has been announced by James L. Taylor, Corporate director of the Organization for Development Assistance Program (ORDAP).

Mr. Tombach

Several teams of company personnel were pulled together from various divisions to perform the work. The Northrop teams trained German personnel in modern scientific methods of Operations Research (OR) and Analysis. Their main goal was reached at the completion of the program when the "students" took over the work.

The program began in 1961 when Mr. Taylor went to Germany as head of the first team. In 1964 Mr. Taylor returned to the Corporate office and was succeeded by Harold Tombach, who remained there until completion of the program at the end of March this year.

Other team members who have returned to Northrop are: James Watson, Carl Hoffmayer, Stephan Van Norman, and Gene Shinosake, all of Norair; Charles Krebs of Nortronics, and Herman Von Guerard, Ventura.

Messrs. Taylor and Tombach also served as scientific advisors to the German Ministry of Defense (GMOD), over-all sponsor of the OR program.

As Northrop personnel pulled out at the completion of the program, they left behind an institution of nearly 150 German professionals fully qualified in the use of scientific decision-making methods and equipment. They were trained in the application of scientific decision aids to augment judgment and experience as required in long-range planning.

The program had five major objectives:

Demonstrate the utility of OR studies for the solution of GMOD decision problems;

Establish an efficient German military OR organization and assist in its management;

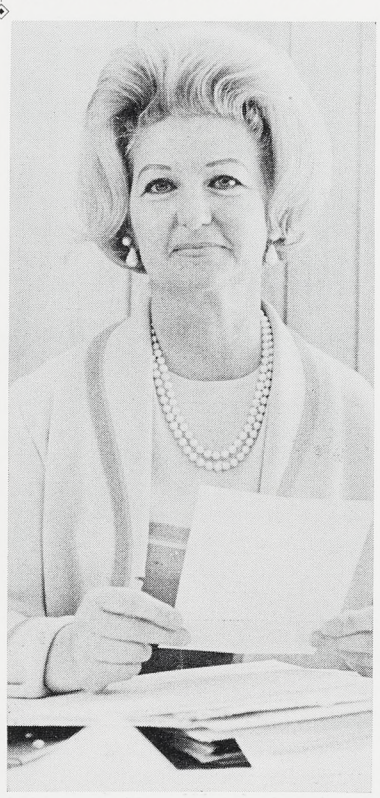
Train German scientists in the application of OR to real military problems;

Develop German OR project leaders;

Accelerate the conduct of OR studies in order to provide the GMOD with early decision aids.

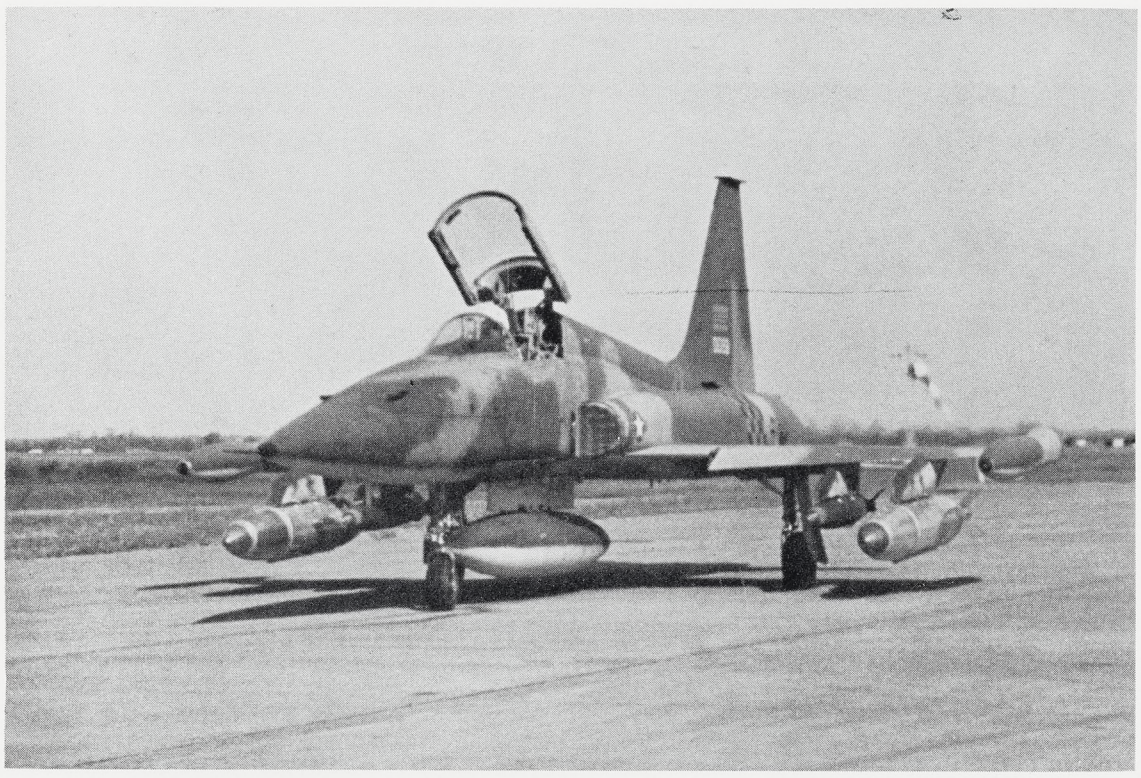
Success of the program is indicated by letters of appreciation sent by the GMOD to Northrop

(See ORDAP, page 4)

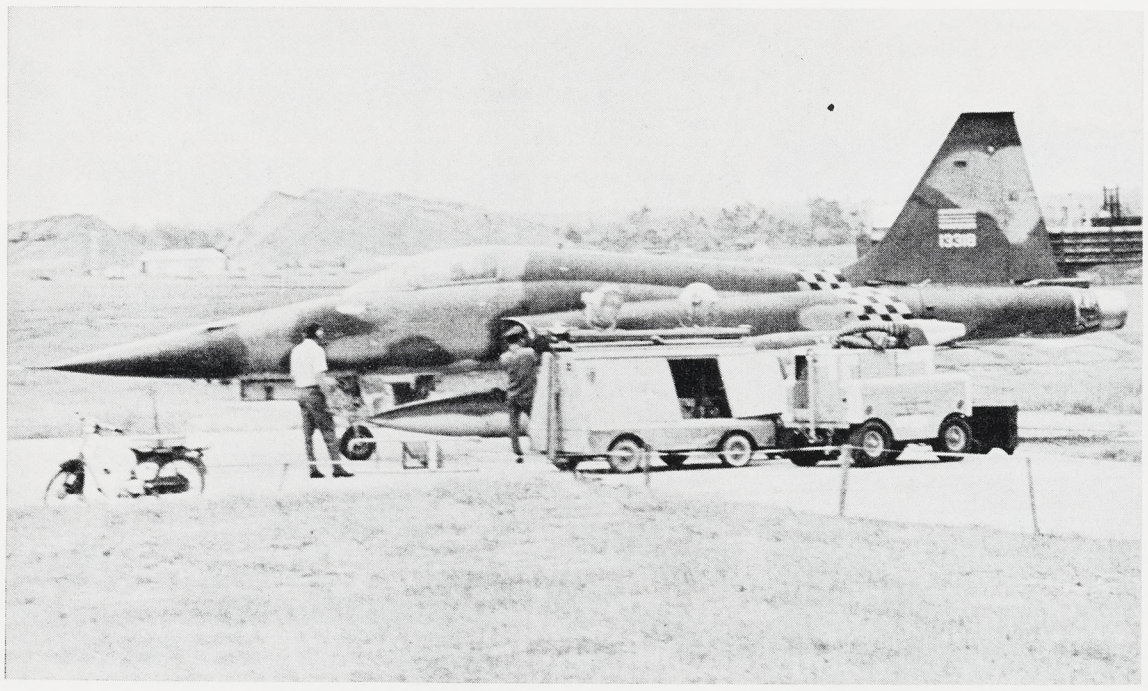


REPRESENTING Northrop at Executive Secretaries, Inc. 21st annual convention in Los Angeles last week were Irma Nikodem (right), secretary to Senior Vice President Robert R. Miller; and Evelyn Purpus, secretary to President Thomas V. Jones.

HISTORY MAKERS—Colonel R. B. Ludeman, commander, 3525th Pilot Training Wing, is congratulated by Hank Waklee, F-5 Field Training supervisor at Williams AFB, Arizona, after piloting aircraft which logged 4,000th hour of flight for first Air Training Command T-38 to reach this mark. Looking on is Lt. Colonel R. Hubka, chief of Maintenance, the co-pilot.

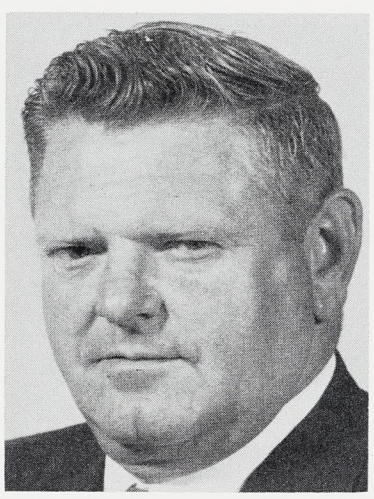


Sgt. John Henrich, a Northrop Employee's Son, Took This Photograph

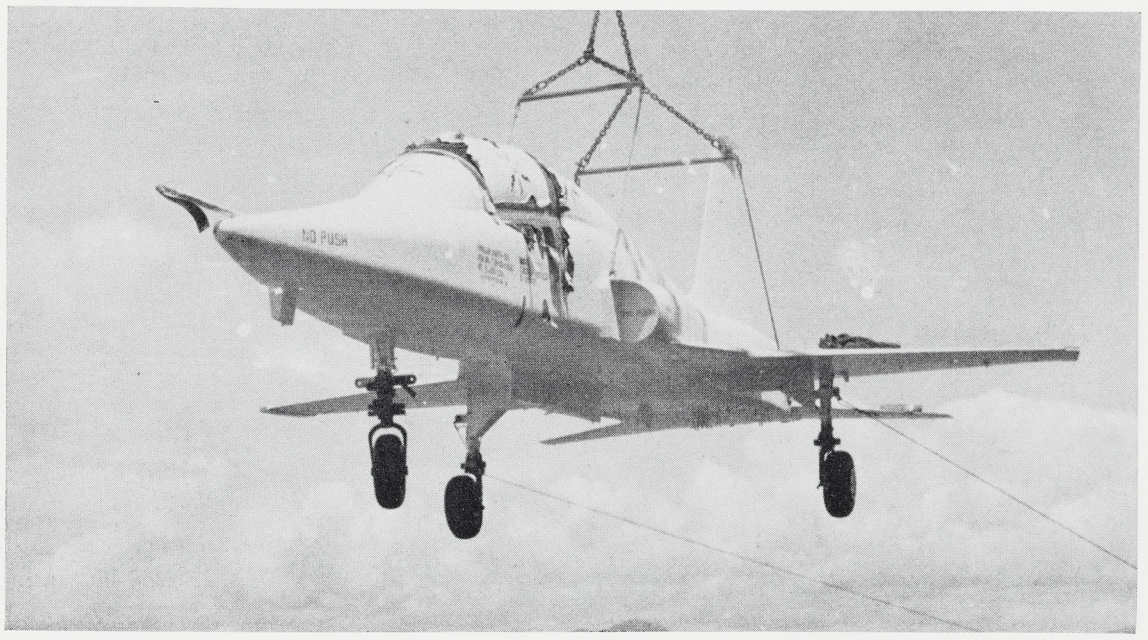


Vietnamese F-5 Goes Through Engine Runup

Tech Reps Davis, Tate, Mann, Christensen



Al Christensen



An F-5 Arrives for Duty in South Vietnam

Norair's Christensen— A Tech Rep Returns From South Vietnam

Al Christensen, Northrop Norair technical representative just back from 17 months in Vietnam, reports Northrop F-5's are in daily action with South Vietnam pilots at the controls.

Mr. Christensen is a 26-year aerospace veteran and was a Navy flight engineer in World War II.

He came to Northrop in 1961 and worked at Rapid City, South Dakota. He returned in 1964 as a flight test mechanic at Edwards AFB. In 1966 he was selected for an eight-month tech rep training program and went to Vietnam in November of that year. His duty there is the longest served in that country to date by Norair tech reps.

Like other tech reps with whom he served, Mr. Christensen found constant adjustment a part of his daily life in Southeast Asia.

His day and night work schedule included adjustment to Viet Cong attacks as well as weather extremes such as rain, blowing dust, heat and humidity.

A rewarding experience, Mr. Christensen says, was the smattering of the Vietnamese language he learned and practiced while visiting homes of Vietnamese with whom he worked. He played cards, shared their food and added to their meager fare when he could.

"By our standards these people are poor, but they are proud and they are gracious hosts," Mr. Christensen said.

What did he bring home from Vietnam?

"Two things," Mr. Christensen said. "They are intangible, personal. One is a better understanding of the Vietnamese people. The other is a feeling I have helped to accomplish something, of having contributed to something worthwhile that will be remembered long after I am gone."

Mr. Christensen was stationed about 20 miles from Saigon at Bien Hoa Air Base, whence most F-5 missions originated.

The Northrop F-5 has become a familiar sight throughout Vietnam.

Transfer of F-5 tactical fighters from the U.S. Air Force to the Vietnamese Air Force in June 1967 was accomplished with a minimum of difficulty, Mr. Christensen reports.

Assisting in the transition were Norair Tech Reps Jack Mann, Lloyd Tate and Ken Davis, and, of course, the USAF. Personnel of the 10th Fighter Commando Squadron were especially helpful in working closely with their VNAF counterparts.

"We felt the changeover went very smoothly, although it was made under combat conditions," Mr. Christensen said.

The F-5 is the VNAF's first jet fighter and the average pilot has logged more than 1,300 hours of flight time, much of it in combat. Most of the pilots have 200 hours in the F-5.

A majority of the pilots and many of the maintenancemen, Mr. Christensen said, were trained at Williams AFB in Arizona.

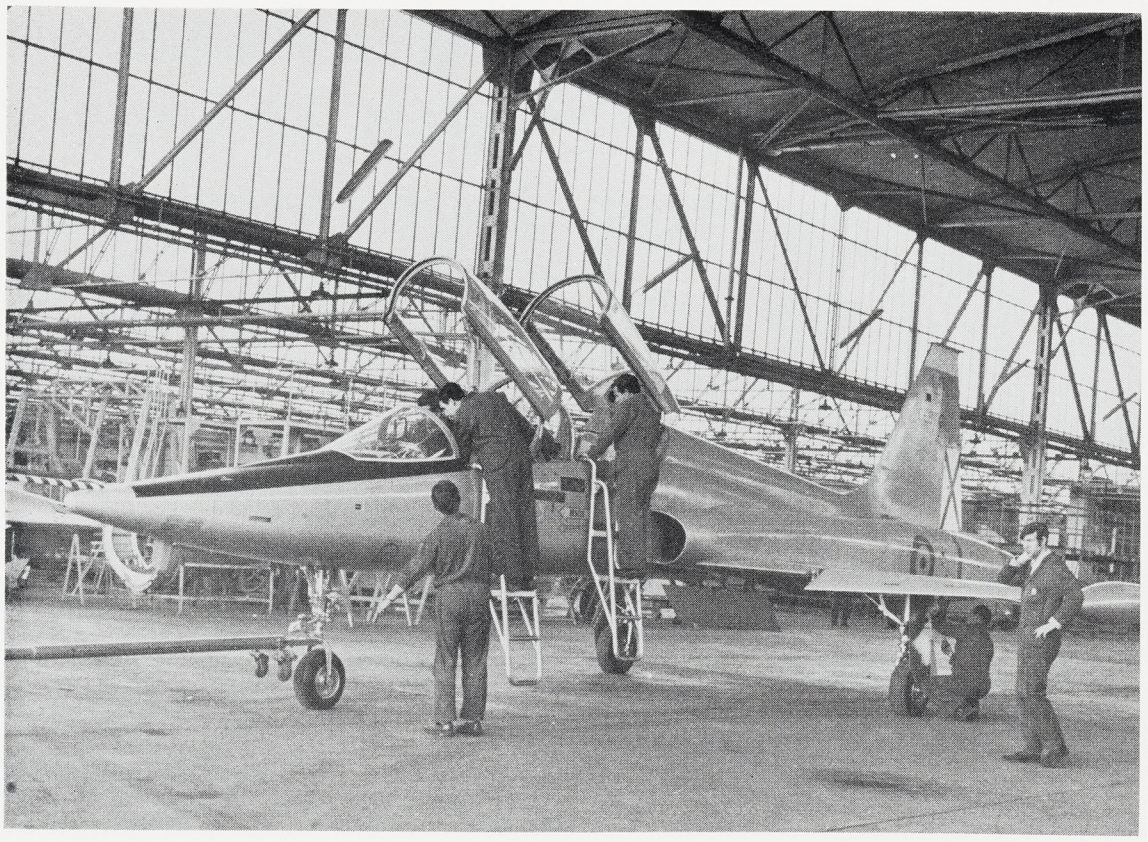
"These combat airmen," Mr. Christensen said, "utilize the versatility of the F-5 to the maximum in flying every type of mission."

He also had high praise for the efficiency of the Vietnamese maintenance crews who wage a constant battle against corrosion and other damage from foul weather.

"I wish every Northrop man and woman who works on the F-5 could spend a few days with the VNAF in action," Mr. Christensen said. "It would be the best possible endorsement of painstaking craftsmanship, doing the job right with the knowledge a life may hang in the balance."

During his stay in Vietnam, he shared a hut with five others at Bien Hoa, the country's largest air base.

An F-5 Returns From a Mission



ROLLOUT IN SPAIN—Technicians make final adjustments on the first F-5B to be built in Spain by Construcciones Aeronauticas, S.A. (CASA) under a license agreement with Northrop. CASA is building the F-5 for the Spanish Air Force. The firm has plants in Madrid, Sevilla and Getafe.

THE NEW VICE PRESIDENT of the San Orco District Business and Professional Women is Frances Brown (left) of Anaheim's Product Support group. She was recently installed by Velva Regan, current vice president of the California Federation of Business and Professional Women's Clubs, Inc. Mrs. Brown will serve the district BPW in executive positions for the next three years.

Employee's Son Among New Pilots

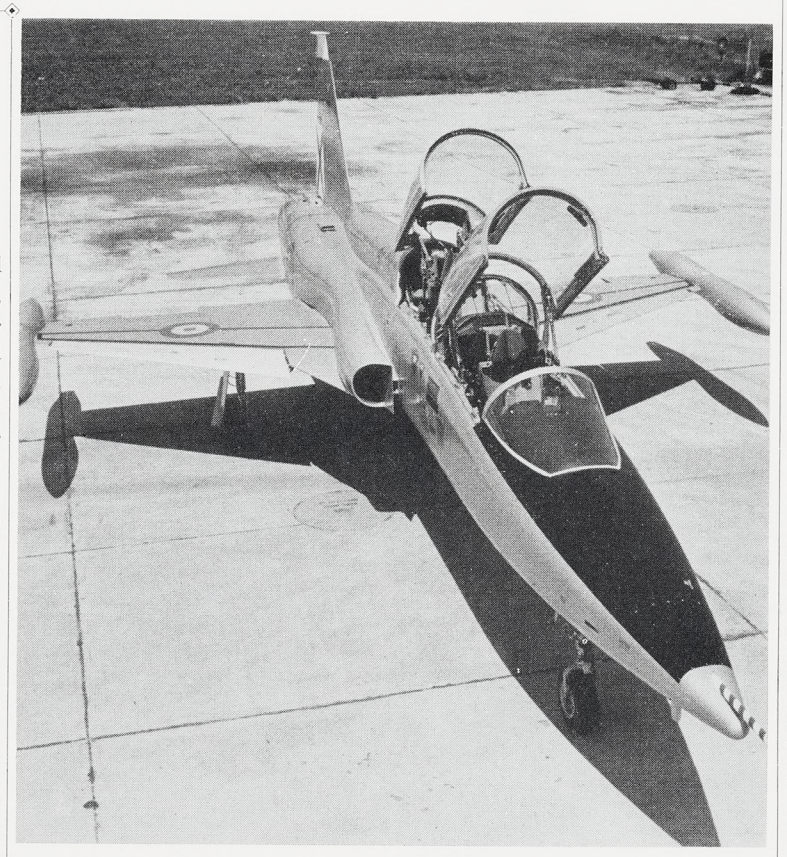
Graduation exercises to be held next month at Williams AFB, Arizona, for an Air Force Undergraduate Pilot Training class will have a special meaning to a Northrop Norair man and his family.

Lt. Heiner

Among the young officers receiving silver pilot's wings will be Second Lieutenant Victor H. Heiner. He is the son of Victor E. Heiner, a foreman at Norair's Santa Fe Facility.

Lieutenant Heiner participated in AFROTC activities while attending UCLA. He reported for pilot's training in June 1967.

His final training phase has included soloing and logging many hours in the Northrop-built T-38 Talon jet trainer.



FIRST OF SEVENTY—Shining in the afternoon sunlight, the first of 70 F-5B aircraft to be built by CASA sits in front of a hangar in Madrid, where rollout ceremonies were held on May 11. CASA is building the F-5 under a license agreement with Northrop.

Automobile Club Begins Regular Service at Anaheim

Services of the Automobile Club of Southern California are now being extended to Nortronics employees at Anaheim on a regular basis, according to Harry Belcher of Employee Services.

"We have had such good response to auto club services offered during license renewal time," said Mr. Belcher, "that we wanted to see if a broadening of this service would be supported year-round."

A representative of the club is present in the Personnel Activities office in Y-1 during lunch periods each Monday, Wednesday and Friday.

Some of the services offered include providing travel and tour information and maps for those planning trips, handling of local traffic citations and changing of registration information on automobile titles.

ORDAP

(Continued from page 2)

President Thomas V. Jones and all members of the Northrop teams for their contributions and services. In 1965 Mr. Taylor was awarded the German Order of Merit for the work of the ORDAP team under his leadership in the initial phase of the program.

ORDAP Discussion

The training aspects of Northrop's Operations Research program in Germany were described in a paper presented to a joint meeting of technical societies May 2 by Harold Tombach, associate director of ORDAP/Europe.

Entitled "A Case History of Education for Military Operations Research," the paper was given during a seminar and panel session of the joint meeting of the Operations Research Society of America and The Institute of Management Sciences.

Employee's Wife Wins Vacation to Portugal, Spain

Frank Ross finds leaving family vacation plans to his wife, Eileen, is a good policy.

Mrs. Ross has the 1968 plans complete, a 15-day visit for two in Portugal and Madeira Island. It begins next month.

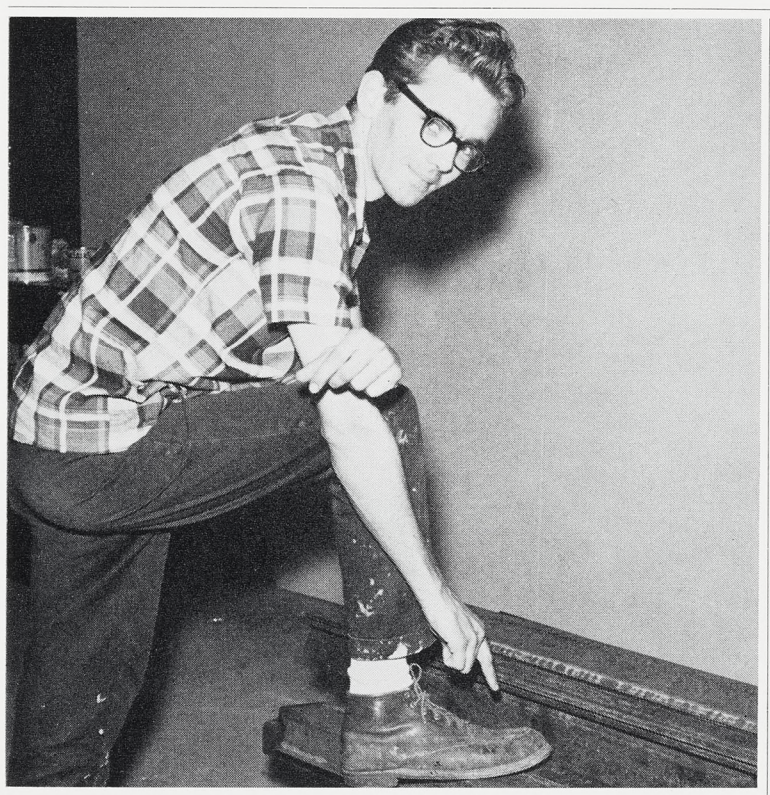
Mr. Ross, a Norair senior mechanical design engineer in Plant Engineering, did have his say in the matter. He wants to spend a few free days to fly to Madrid for a visit to CASA where Northrop F-5's are being built for the Spanish Air Force.

Mrs. Ross won the all-expense trip for two in a contest.

'Fiesta' Dance Set

Personnel Activities outlets in the Hawthorne area still offer tickets for the first NRC-sponsored dance of the year. They sell for $1.50 per person.

Billed a "Fiesta," the dance will be held from 9:30 p.m. to 1:30 a.m. June 15 at the Mayflower Ballroom, Inglewood.



NO INJURY—Safety shoes prevented injury to Mike Griesser when 200 pounds of steel angle material toppled off a cart onto his foot. A Norair jig and fixture builder, Mr. Griesser is the latest member of the Golden Shoe Club.

AIR FORCE'S FAIREST—Colonel David E. Galas, Northrop AFPR, is surrounded by the ladies on his staff on National Secretaries' Day. Corsages and lunch with their bosses highlighted this special occasion.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Volkswagen, 1966, 19,000 miles, equipped w/$800 in extras, $1,800. 213-677-3471. A

Falcon, 1960, r/h, auto., $200. 213-672-4450. A

Packard, late model, good tires & brakes, $40. 213-677-6387. A

Station Wagon, 1967 Ford, 6-pass. Country Sedan, 390 eng., auto. trans., a/c, r/h, $2,980. 213-324-2992. A

Metropolitan, 1961, $275. 213-370-5316. A

Chevy II, 1963 S.S., 6-cyl., auto. trans., new brakes, bat., tires, $900. 213-644-5852. A

Pontiac, 1965 Le Mans, 4-dr. sedan, 8-cyl., auto. trans., r/h, $1,500. 714-847-4638. A

Chevrolet, 1960, 6-cyl., auto. trans., $60. 213-671-1660. A

Chevrolet, 1963 Impala sport cpe., V-8, p/s, radio, $995. 213-328-5339. A

Pickup, 1960 Ford, ½-ton, 8′ box, hvy. duty springs & tires, $500. 213-325-6652. A

Corvette, 1965 Sting Ray, fuel injection, mag whls., many extras, new tires, $3,100. 213-374-2756. A

Mercedes Benz, 1956 190 SL, $995. 213-373-1395. A

Buick, 1966 Riviera, air, full power, $3,375. 213-675-5329. A

Thunderbird, 1963, full power, air, $1,245. 213-675-7740. A

Volvo, 1963, new tires, r/h, $795. 213-325-5245. A

Volkswagen, 1964 Squareback 1500 S, '65 eng., sunroof, AM-FM, $1,250. 213-328-4128. A

Pontiac, 1963 Grand Prix, fully equipped, take over $67.81 mo. pymts., $1,450 approx. bal. 213-676-6349. A

Corvair, 1962 Spyder, turbo-charge E.D., 4-spd., new tires & muffler, $450. 213-320-3048. A

Mercury, 1958 Monterey, 2-dr., stick shift, good tires, $300. 213-672-9449. A

Buick, 1966 Special, convt. V-8, auto. trans., r/h, $1,495. 213-675-0777. A

Mustang, 1965 h/top, V-8, auto., r/h, 35,000 miles, $1,700. 213-472-2031. A

Volkswagen, 1962 2-dr. sedan, new tires, $850. 213-699-6395. A

Volkswagen Camper, 1966 Westphalia w/pop-up top, $2,100. 714-842-5837. A

Club Wagon, 1964 Econoline Falcon, auto. 3-spd. trans., r/h, 6 cyl. eng., $1,450. 213-377-3487. A

MG Midget, 1963, r/h, new paint, reblt. eng., $875. 213-349-7271, 213-754-4178. A

Plymouth, 1957, V-8, $175. 213-679-4464. A

Dune Buggy, Volkswagen, standard or shortened wheelbase, fiberglass body, tuned extractor exhaust sys., $1,650. 213-676-6188. A

Chrysler, 1965 300L, 2-dr., h/top cpe., AM-FM radio, p/s, p/b, p/w, $2,000. 213-374-0504. A

Porsche, 1966 911, elec. sunroof, AM-FM stereo, $4,500. 213-438-8331. A

Chevrolet, 1960, convt., 348, 4-spd., new tires, p/b, p/s, $500. 213-755-6084. A

Station Wagon, 9-pass., 1959 Pontiac, r/h, a/c, new tires, p/b, p/s, Hydromatic, needs work, $100. Box 1001. A

Thunderbird, 1963, all power, a/c, new tires & paint, $1,300. 213-860-5452. A

Station Wagon, Falcon, 1965 2-dr., V-8 eng., auto. trans., p/s, r/h, $1,450. 714-962-4134. A

Pickup Truck, 1960 Chevrolet, ½-ton, w/ factory shell, $800. 213-370-2234. A

Ford, 1964 Galaxie 500, 427 cu. in., 425 h.p., 4-spd., many extras, $1,000. 213-941-1769. A

Ford, 1966 Econoline, 240 h.p., stick shift, new tires, r/h, $1,695. 213-671-5294. A

Mustang, 1966, V-8, auto. trans., p/s, r/h, take over $76.88 mo. pymts., $2,152.64 bal. 213-722-0668. A

Chevelle, 1964 Malibu, 4-dr., p/s, auto., radio, V-8, 283 cu. in. eng., $1,250. 213-676-5219. A

Karmann Ghia, 1960 convt., $425. 213-839-9034. A

Ford, 1959 Galaxie, 4-dr. h/top, $300. 213-326-3603. A

Corvair, convt., 4-spd., floor shift, $700. 213-379-7853. A

Chevrolet, 1964 Impala, 4-dr. h/top, fact. air, 327 V-8, auto., p/s, many extras, $1,495. 213-327-2279. A

Oldsmobile, 1956 2-dr., h/top, $150. 213-644-6156. A

Ford, 1961, Falcon Ranchero, 6-cyl., auto. trans., $550. 213-374-5728. A

Station Wagon, 1961 Chevrolet, 6-cyl., stick, $475. 213-379-2326. A

Station Wagon, 1959 Ford, new trans. & brakes, $275. Box 1002. A

Corvair Monza, 1963 Spyder, convt., good top, 4-spd., $500. 213-329-2926. A

Automobiles For Sale

Station Wagon, 1956 Chevrolet, 9-pass., p/s, auto. trans., new brakes & tune up, o/sized tires, $320. 213-376-6415. A

Volkswagen, 1958, new gen. & voltage reg., cartop carrier, $395. 213-372-4907. A

Falcon, 1963 Sprint h/top, V-8, 4-spd., p/s, r/h, shop manuals, $900. 213-261-6865. A

Volkswagen, 1958 sedan, gas saver access., needs paint, $450. 213-644-1952. A

Toyota, 1966 Corona, auto. trans., $1,500. 213-320-4823. A

Camper, 1965 Volkswagen, awning w/sides, stove, ice box, water tank, $1,895. 714-962-1805. A

Ford, 1957 2-dr. h/top, $165. 213-320-3844.

Pickup Truck, 1956 Chevrolet, 6-cyl., $250. 213-542-3626. A

Dodge, 1960 Phoenix 500 2-dr., approx. 15,000 miles, r/h, fact. air cond., $300. 213-663-3622. A

Volkswagen, 1964 sedan, Bendix radio, $950. 714-525-2026. A

Jaguar, XKE 4.2, 1965 roadster, r/h, wire whls., $3,400. 213-377-8745. A

Pontiac, 1965 Le Mans, 326 cu. in., p/s, AM-FM radio, 5 new tires, auto. trans., $1,875. 213-329-1202. A

Ford, 1958 Fairlane, 312 Thunderbird eng., r/h, $150. 213-835-6492. A

MGB, 1964, Rader wheels, r/h, $1,350. 213-377-9713. A

Volkswagen, 1966, 13,000 miles, w/s/w, $1,450. 213-324-8747. A

Chevrolet, 1962 Impala S.S., V-8, 409, 4-spd., w/2 4 bbls., tach., new trans., $900. 213-834-1592. A

Station Wagon, 1961 Pontiac, fact. air, extras, $795. 213-783-8271. A

Household Items For Sale

Washer, G.E., needs work, $15. 213-644-2607.

End Table, Ethan Allen Salem maple, tiered top, louvered doors, $25. 213-675-5522. B

Range, Frigidaire, 2 ovens, broiler, 220V elec., $65. 213-644-1362. B

Dinette Table, Early American, 48″ dia., 4 chairs, pine, $75. 213-677-7400. B

Sewing Machine, cabinet model, straight stitch, $20. 213-374-8358. B

Dinette set, Virtue Bros., 4 chairs, table & ext., $30. 213-378-2609. B

Crib, chestnut finish, mattress, 6 yr. size, $15. 213-325-8175. B

Occasional Chair, rose colored freize, green fringe, $20. 213-755-1925. B

Washer, Kenmore, auto., 500 model, used 2 yrs., $65. 213-347-4200. B

Dryer, elec., Norge 14, $30. 213-373-3274. B

Chair, tan Naugahyde, $25. 213-867-5809. B

Deacon's Bench, antique, $100, other items, various prices. 213-375-8804. B

Sterling, Heirloom, Damask Rose pattern, 8-7-pc. place settings, serving pcs. & chest, $700. 714-528-5504. B

Refrigerator, $35. 213-944-1904. B

Miscellaneous For Sale

Clothing, boy's, sizes 10-20, $50. 213-882-0761. C

Porch Railing, ornamental w/center post, 15′, $75. 213-293-5993. C

Airplane, Cessna 140, 230 s.m.o.h., metal wings, full gyro panel, new paint, disc brakes, $3,400. 714-532-1510. C

Camera, Yashica SLR f/1.4, $165. 213-861-4798. C

Outboard Motor, 3 h.p., British Seagull, plus 40 long shaft, $65. 213-320-3529. C

Flash Reflector, Honeywell Tilt-A-Mite, fan-type, never used, $6. 805-498-3549. C

Movie Projector, Wollensak 8mm, $50. 213-662-1817. C

Horse, 8-yr. old gelding, ½ quarter, ½ Arabian, sound, experienced rider only, $500. 213-644-2717. C

Rifle Telescope, 4-power Bushnel, $7.50 213-375-7265. C

Camera, AGFA, 35mm f/2.8, fully auto. w/ flash & extras, $25. 213-672-7424. C

Exercise Table, Stauffer, $300. 213-377-4727. C

Wedding Ring Set, cost $350; $200. 213-376-6182. C

Ski Boat, 14′ Catamaran, glass covered, plywood hull, 75-A-Merc. eng., 15″ whl. trailer, $750. 213-322-5434. C

Accordion, 120 bass contello, $200. 213-329-3217. C

Autoharp, case, $30. 213-323-8797. C

Bicycle, Schwinn Sting Ray, $25. 213-545-1672. C

Sleeping Bag, dble., sleeps 2 adults, w/air mattress, $25. 213-378-1863. C

Poodle, French mini-toy, AKC reg., teddy bear marked, male, shots, $75. 213-754-3665. C

Ski Boat, 12′ 6″, fiberglass o/wood, 40 h.p. Mercury eng., Heco trailer, $400. 714-828-8439. C

Sloop, Cal 20, trailer & boat bath, King Harbor slip avail., $3,600. 213-378-1561. C

Mini-Bike, 3½ h.p., new tires, retractable front, $120. 213-644-3729. C

Wedding Dress, size 12, New York orig., $50. 213-644-5935. C

Sailboat, 12′, sloop rig, Firefly class, trailer, $595. 213-377-5862. C

Amplifier, Fender Bassman, $295. 213-675-7410. C

Motor, Evinrude, 18 h.p., 3 extra props, $200. 213-371-3620. C

Miscellaneous For Sale

Tool Box, lge. Craftsman, $25. Box 1003. C

Bicycle, 10-spd. boy's 26″ Schwinn, new Derailleur chain & sprocket plate, $35. 213-345-3195. C

Stole, Homo mink, white, $150. 213-275-1436. C

Utility Trailer, 6′ x 7′ x 5½′ w/2 section removable rack, o/load blocks, $120. 213-371-9829. C

Prom Gown, mint green crepe, white empire top, sleeveless, size 7 jr. petite, $18. 213-755-7255. C

Stereo, Emerson, walnut, 100 watt, AM-FM, 6 spkrs., Garrard changer, $150. 213-675-8068. C

Golf Clubs & golf bag, $30. 213-323-8213. C

Organ, Conn, electronic, minuet model, walnut Italian provincial spinet, ext. spkrs., lesson books & maintenance manual, $595. 213-430-1531. C

Pups, scotty, $100-$150. 213-645-8405. C

Boat, 19′ 1965 Glastron V195, Mercruiser 150, power tilt, sleeps 4, tandem trailer w/ power winch, $3,800. 213-323-6366. C

Dirt Bike, Honda 50, just o/hauled, .275 tires, $110. 213-675-3254. C

Cabin Cruiser, 1959 Owens, 24′, new 220 h.p. Chev. V-8, radio, extras, $2,600. 213-375-7148. C

Air Conditioner, for auto, Mark IV, $200. 213-324-1237. C

House, 2 baths, 4-bdrm., in Garden Grove, 2-car gar., lge. fenced-in yard, low down, $21,500. 213-676-4203, 213-581-5208. C

House, 3-bdrm., bltins, cpts., dps., patio, newly painted, $25,950. 213-676-3912. C

Golf Clubs, matched set MacGregor, 2-9 irons, 1, 2 & 3 woods, bag, $40. 213-476-1842. C

House, 2-bdrm., h/wood floors, lge. fenced yard, low down, 15 mins. from Hawthorne, $18,500. 213-371-4297. C

Boat Trailer, tubular steel, for sailboats up to 2 tons, $200. 213-831-9545. C

Pup, miniature poodle, silver, registered, 7 wks. old, female, $50. 213-866-8977. C

Engagement & Wedding Rings, size 5, never worn, $50. 213-835-8809. C

Pups, Irish wolfhound, reg. champ. stock, $400. 213-379-3487. C

Townhouse, cpts., dps., bltins, 2½ baths, 4-bdrm., family rm., screened-in lanai & patio, air cond., pool, $24,950. 714-635-1686. C

Boat, 1963 14′ Glasspar, 35 h.p. Merc. A, cover & Sun Valley trailer, $1,300. 213-464-1084. C

Crystals, selected 8 meg., for use w/6 meter & 2 meter transmitters, 35¢ ea. 213-630-4188. C

K-Cello, complete w/cloth cover & bow, $200. 213-479-1432. C

Pup, Labrador retriever, female, AKC, 16 mos. old, trained, shots, $250. 213-675-3557. C

Scuba Diving Equipment, tanks, Aqua Master reg., full dress wet suit, other access., $150. 213-325-5875. C

Preamplifier, Dyna PAS-3X, factory wired, used approx. 1 yr., $70. 213-672-5534. C

Honda, 1965 model, CB 160, 9,000 miles, $275. 213-645-9367. C

Spinning Reel, Mitchell Garcia #408, ultra-light, 2 spools, 4 & 6 lb. test line, & spinning rod, $35. 213-675-4752. C

Lot, 25′x100′, Big Bear City, level, trees, all utilities avail., $1,450. 213-598-3072. C

Power Mower, Sears, recently tuned & sharpened, $25. 213-833-2584. C

Boat, 13′ Wizard, fiberglass runabout, no motor, tilt-top trailer, $260. 213-378-3055. C

Home, 4-bdrm., 2 baths, dble. gar., lge. lot, just refinished, West Garden Grove, $23,500. 213-596-4215, 213-430-0441. C

House, 4-bdrm., 1¾ baths, elec. kitchen, insulated blockwall, sprinklers, encl. patio, bltin b-b-que, fireplace, $28,000. 213-320-6975. C

Camera, Polaroid 103 color pack, flash, case, $80. 714-897-8447. C

Pups, AKC reg. kerry blue terriers, 5 females, 2 males, $100 & up. 714-879-7276. C

Air Compressor, portable, ¾ h.p., 2-cyl., 12 gal. tank & auto. cutoff, 3 mos. old, $150. 213-371-2531. C

Acreage, 5 acres, near Willow Springs, $35 dn., $35 mo., $3,500. 213-378-1026. C

Suit, size 7, blue, 3-pc., Swiss-made, $30. 213-870-8326. C

Ski Boat, 16′, Esquire, all glass, 100 h.p. Merc. powered, trailer, $2,500. Box 1004. C

Honda, 305, $375. 213-329-1657. C

Tires, 5 tubeless, 7-17.5, 6-ply mounted on 6 lug drop center rims, $50. 213-675-0521.

Motorcycle Carrier, 2-wheel trailer set up for 2 motorcycles, $125. 213-867-1476. C

Stereo, portable, 4-spd., w/detachable speakers, diamond stylus, $65. 213-756-3472.

Home, 2-bdrm., 1¾ baths, cpts., dps., lge. R-2 lot, $22,250. 213-671-8672. C

Cello, handmade in France, ¾ size, fine tuners, bow, case, $180. 805-495-0507. C

Cabin Cruiser, 16′, sleeps 2, Evinrude Starflite, 50 h.p., ski hitches, fully equipped, American trailer, $750. 213-372-1445. C

Home, 4-bdrm., 1¾ baths, family rm., cpts., dps., bltins, new paint, walnut panelling, $23,900. 714-737-9520. C

Drafting Machine, Bruning, very little use, $90. 213-327-1949. C

Racing Engine, Chevrolet, 315 cu. in., other misc. parts, $165 or sell separately. 213-639-6653. C

Miscellaneous For Sale

Intake Manifold & carb. from 1965 Pontiac 362 cu. in. eng., $15. 213-644-6061. C

Power Mower, 20″ Winston, $20. 213-323-4695. C

Organ, Hammond A-100, 6 free lessons inc., $1,800. 213-430-5543. C

Apt, 5-unit, 1 block to Norair Hawthorne, 2 3-bdrm., 2 2-bdrm., 1 single, $72,350. 714-837-8257. C

Lot, for house & sep. boat dock, Salton Sea, roads & util. in, near yacht club, $7,100. 714-535-1694. C

Piano, Starr console w/bench, mahogany, $300. 213-323-1698. C

Room Humidifier, port., motor driven atomizer, 1½ gal. capacity, 120 V a.c., $14. 213-693-4117. C

Piano, small upright, full keyboard, $200. 213-675-7729. C

Ping Pong Table, ¾″ plywood top, folding legs, net & paddles, $15. 213-372-2759. C

Camera, Yashica Mat 127, twin lens, bltin light meter, case, $35. 213-676-3050. C

Honda, 1966, 305 cc Super Hawk, many extras, $450. 213-372-0313. C

Catamaran, 13′ fiberglass Cal Cat, $600. 213-379-2331. C

Surfboard, Hobie, 9½′, wood, $35. Box 1005.

Wanted to Buy

Trailer Hitch, E-Z lift. 213-371-6758. D

Radio Control Units for model airplane hobby. 213-370-7092. D

Outboard Motors, 2, 5 to 10 h.p., & 14 to 20 h.p. w/elec. start, steering controls. 213-830-0702. D

Station Wagon, 9-pass., 1964 or '65, preferably Plymouth, Ford or Chev. in excellent condition. 213-375-6463. D

Dryer, gas, in good condition. 213-370-7749. D

Family Tent, preferably umbrella type. 213-320-4286. D

Tickets, 6, for Disneyland Northrop Night, May 25. 213-676-9989. D

Lawn Edger, power, & mower. 213-679-4863.

Camper Shell, cab-height for 8′ wide bed. Box 1006. D

Free (To Be Given Away)

Kittens, multi-colored, male, trained, shots. 213-328-0460. F

Rentals Offered

Apt, 1-bdrm., furn., sub. parking, pool, bltins, cpts., dps., pvt. deck, $150 mo. 213-679-1680, 213-670-6084. G

Cabin, Green Valley, Calif., $25 w/end; $45 wk. 213-324-0649. G

Cabin, A-Frame, furn., sleeps 5, 40 miles west of Colorado Springs, $70 wk. 213-894-1937. G

Chalet, Lake Arrowhead, furn., 3-bdrm., 2 baths, North Shore, lake view, $600 mo.; $175 wk. 213-377-5936. G

House, 3-bdrm., 3 blks. to beach, cpts., dps., bltins, refrig., wash-dryer, pvt. patio, $230 mo. 213-378-0187. G

Cabins, Lake Gregory & Crestline, sleep 6, make reservations for June-Sept., $25 w/ ends; $60 wk. 213-391-2040. G

Cottage, Ocean Bch., San Diego, make reservations now, $65 wk. 714-826-2007. G

Bachelor Apt, furn., utilities, few blocks from Northrop, $75. 213-674-5503. G

Cabin, Lake Arrowhead, north shore, modern, 200 ft. from lake, $100 wk. 213-375-2255. G

Home, lake front, Bass Lake, pvt. boat dock & beach, main unit, sleeps 8, $225 wk.; small unit, sleeps 5, $115 wk. Box 1007. G

Apt, in Catalina, $30 w/end; $65 wk. 213-323-0526. G

Rentals Wanted

House, 2-bdrm., unfurn., lge. fenced backyard desirable, in Torrance-Lomita area, up to $140 mo. 213-320-2071. H

House, 2-bdrm., Norair Hawthorne area, cpts., small fenced yd., approx. $100 mo. or less, prefer utilities paid, unfurn. Box 1008. H

Camper, Volkswagen, from approx. mid-June to mid-July. 213-671-1625. H

Apt. or House, furn., 1-bdrm., no pets or children, prefer gar., Manhattan Bch. area. 213-532-4182. H

Child Care

Child Care offered, my home, reasonable rates, near Redondo Bch. Blvd. & Figueroa. 213-323-1429. I

Personals

Lady, would like to share home & household expenses w/other lady, preferably retiree. 213-676-4537. L

The many floral contributions & expressions of sympathy shown from the co-workers of Edward M. Ross has been greatly appreciated, in the recent passing of our husband & father. MRS. MARGARET ROSS & FAMILY. L

I wish to express my sincere thanks to my many friends at Northrop for remembering me during my recent stay in the hospital. Your kindness, cards, gifts, visits, were deeply appreciated. ADA McMILLEN. L

Lady passenger wanted for 1-way trip to Grand Junction, Colo., leaving June 15 p.m. or June 16 a.m., share fuel & lodging expense. 714-642-2616, 714-671-1254. L

I want to sincerely thank all Northrop personnel for their heartfelt thoughts & concern before & during my recent bereavement. All funds received on behalf of my late wife, Mrs. Claire Blanchette, will be donated to the American Cancer Foundation. ALBERT BLANCHETTE. L

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Del Amo & Long Beach Blvd., Long Beach. Jean M. Wigley, Norair ext. 2605, 213-423-1711.

Crenshaw & El Segundo Blvd., Torrance. R. Lopez, Mariposa ext. 4044.

Pacific Coast Hwy. & Narbone, Lomita. Patti Palmer, Norair ext. 1628, 213-378-7651.

Rides Offered

7 a.m. — 3:42 p.m.

Pacific Coast Hwy. & Narbone, Lomita. Patti Palmer, Norair ext. 1628, 213-378-7651.

Personals

Fly 1 to 5 people to Las Vegas, San Francisco, Mexico, anytime. 213-322-4221, 213-866-2079. L

We wish to express our appreciation for the kind thoughts & deeds extended to us at the time of the death of our husband & father, John Bourke. CAROL & LYNDA BOURKE. L

For Sale or Trade

Binoculars, Nikon, 7x35, used once, $65 or trade for movie screen, camera tripod and/or stereo headphones. 213-376-4473. M

Acreage, Lake Los Angeles, improved acre, $5,290 or trade equity for Volkswagen camper. 805-526-7767. M

Home, stucco, in Inglewood, 3-bdrm., 2 baths, den, cpts., h/wood flrs., 2-car det. gar., patio, b/wall fence, $9,000 equity, $26,000 or trade for land or home in Malibu Canyon or Thousand Oaks area. 213-671-8401. M

Toastmistresses, Square Dancers Share Program

Northrop's Smoothsayers Toastmistress Club will take part in the Golden Desert Regional Conference of International Toastmistress Club over the coming weekend at the Statler Hilton Hotel, Los Angeles.

Lois Paris, president, will be an official delegate and a hostess. Shirley Wilson is an alternate delegate. Vice President Marguerite Dougherty will be a workshop speaker.

Members of the NRC Square Jets will present an exhibition of square dancing.

Dancers scheduled to participate are Clarissa Keinonen, Floyd Rowe, Dick Heise, Evelyn Heise, Dick Rinehart, Walt Black, Thelma Black, Henry Mitsch, Lucille Mitsch, Jean Bruegestrass, Bill Bruegestrass, Vernon Marshall, Marjorie Goodrich, Jim Wildes, Janet Jonson and Lois Paris.

Carl Willison will call.

Trap, Skeet Club Schedules Shoot

Five classes of winners in the April special Trap and Skeet Club shoot have been announced by Mark Burnett, Norair Trap and Skeet Club commissioner.

Winners and their scores in their respective classes are: Class AA, Richard Cade, 80; Class A, Norm Loven, 81; Class B, Don Brennan, 76; Class C, Harmi Tanouya, 64; and Class D, Bob Young, 55.

Winners of the May shoot held over the past weekend included the following class champions: Dick Greetan, Class AA; Tee Doon, Class A; Ev Bateson, Class B; A. H. Harrington, Class C; and Bob Young, Class D. Taking part were 53 competitors who fired 50 rounds of skeet and 50 rounds of trap.

The shoot of June 9 will be at the Watson Range on Alameda Street, south of the San Diego Freeway. It is scheduled to begin at 10 a.m. with signup at 9:30 a.m.

Transformer Patent Awarded to Engineers

Two employees of Nortronics' Precision Products Department have received a patent for their invention of a self-testing variable transformer.

John R. (Jack) Bouchard, chief of Inertial Product Engineering, and Hank Packard, Electromagnetics project engineer, invented the transformer, which has applications in the field of electromagnetic transducers.

Variable transformers are used in guidance, indication and control systems to produce an electrical signal. The self-testing variable transformer is similar to PPD's Rate Gyro microsyn, but has two windings which allow for the self-test feature.

For self-testing, Mr. Bouchard explained, a capacitor is switched across a torque winding, resulting in rotor deflection to the left. Switching the capacitor across the other winding results in the rotor turning in the opposite direction.

"During torquing," he said, "the microsyn portion is powered, and functions normally, indicating rotor freedom. Torquing power comes about by the transformer action between the microsyn primary winding and either of the two torque windings. Maximum torque is obtained by series resonating the torquing windings upon switching in the capacitor."

The new technique is simpler and more reliable than earlier systems.

In addition to the patent, each man received a cash payment from Nortronics, a tie bar, and a certificate of award as participants in Northrop's Patent Award Plan.

VARIABLE TRANSFORMER—Jack Bouchard (left), chief of Inertial Product Engineering at Nortronics' Precision Products Department, and Hank Packard (center), Electromagnetics project engineer, review a self-testing variable transformer with Willard Graham, Northrop's patent director. Mr. Bouchard and Mr. Packard received a patent for the transformer.

Jack Blonk and Ralph Hamrick Win Golf Tourney

Two Nortronics golfers, from a field of 28, have won the recent partner's best ball tournament at the par 72 Massacre Canyon Course in Gilman Hot Springs.

Jack Blonk and Ralph Hamrick, both of Anaheim Purchasing, finished with a seven-under-par 65. They edged out George Baldwin of Engineering and Bill Christian of Production, and Jack Barmer and Bob Montgomery of Production Engineering.

These two teams tied for second with a 66.

Third place was knotted three ways between Axel Acselrod of Change Control and Bob Yarbrough of Materiel; Tom Albericci and Dick Montgomery of Manufacturing; and Otto Dorner and Norio Mitsuoka of Engineering. These three sets of partners each had a 68.

The next tournament for Anaheim golfers will be medal play this Sunday at Mission Viejo, starting at 10 a.m. Meanwhile, this Saturday, 60 Hawthorne golfers will compete at the Jurupa Hills Country Club tournament in Riverside. First tee off is 10:15 a.m.

Further information on the tournaments is available from George Baldwin, Anaheim golf commissioner, ext. 1194; and Dave Krieghoff, Hawthorne golf commissioner, ext. 607.

RELIABILITY

(Continued from page 1)

throp's Data Processing organization.

Reliability organizations in the past relied on semi-automated methods to monitor equipment performance, assess commitments, and provide a level of confidence in a product.

The new RIPS system evolved because the variable nature of assessment practices did not lend itself to a common solution. RIPS solves this problem by providing the needed flexibility in a single system.

In the near future the Management Systems organization will contact and indoctrinate other potential Northrop users in procedures to use RIPS.

Anaheim Reliability, headed by Dave Kessler, supervisor of Reliability Engineering, is currently investigating the system.

Later, Nortronics analysts will refine RIPS even more to provide graphic presentation of reports.

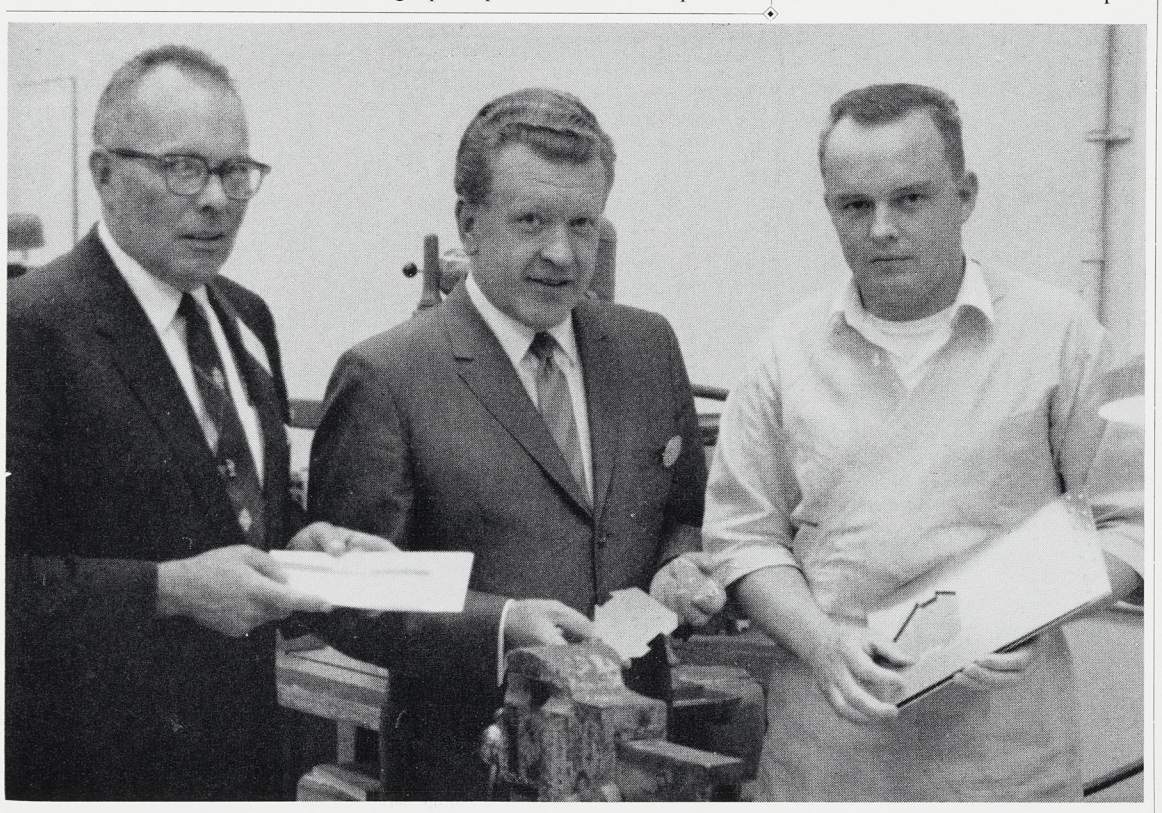
Deschle Earns $590 Award For 'Slapdie'

Thirty cash awards totaling $1,542 have been presented to Nortronics employees at Anaheim, Hawthorne, Page Court and Palos Verdes as part of the ever-increasing number of participants in the Nortronics Suggestion Award program.

The largest award for the month went to Heribert Deschle of Fabrication Services at Hawthorne. He received a $590 check from Ross Miller, Nortronics vice president and Navigation department manager. Mr. Deschle made a "slapdie" which will turn out more consistent parts cheaper than former methods.

Another award of $184 was earned by Teresa Correa in Manufacturing. She made up a special sheet aluminum fixture which holds printed circuit leads in line for straightening if the printed circuit board has become warped.

'SCOUTING HORIZONS UNLIMITED' is the theme of the North Orange Council Scout-O-Rama set for this weekend in Anaheim. Elmer Noonan (second from right), director of Industrial Relations at Nortronics, will serve as assistant general chairman for the event. Other planners are (from left) Richard Lamb, Robert Walter and Carl Kiefer, general chairman.



A 'SLAPDIE' WORTH CASH is the end result of what started as a suggestion award idea submitted by Heribert Deschle (right) of Fabrication Services at Hawthorne. Larry King (left), Nortronics Suggestion Awards administrator, made arrangements for presentation of the $590 check by Ross Miller, Nortronics vice president and Navigation department manager. Mr. Deschle's new die will save money over former methods, and turn out better parts.

BEST DRESSED 'HOBOES' at the recent Northrop Wanderers campout at Lake Casitas were Herb and Irene Henriksen. Irene is a project group controller with the Financial Forecasting and Planning group at Palos Verdes.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California — Vol. 26, No. 11 — June 5, 1968

AFTER THE FIRE — Bert Millspaugh (in checkered shirt) and members of his family sift through the ashes of their Santa Ana Canyon home which was destroyed by fire last October. Today, the Millspaughs are in a new home, built upon the site of the old one.

New Home Rises After Holocaust

The new house that Bert built stands on the same spot where fire destroyed the Millspaugh home last October.

Friends at Northrop — through NORAID and out-of-pocket contributions — gave the Millspaugh family a financial boost toward getting the new house started.

The Millspaughs are Bert, a contract specifications engineer at Nortronics Anaheim, his wife, Barbara, their six children ranging in age from 3 to 13 and their dachshund, Huey.

What started as a Halloween holocaust has turned into a happy homecoming as the family is getting "pretty much settled now" in its new quarters, just six and one-half months after sifting the ashes of their former home.

According to Mr. Millspaugh, the new Spanish two-story "gives us a lot more room to move around." He's referring to the 800 additional square feet gained after the rebuilding. They now have the extra convenience of four bedrooms (three were a pinch before), a family room and separate dining room.

MOVING IN—Less than seven months after the fire, the Bert Millspaugh family moved into the new home. Here, Mr. and Mrs. Millspaugh and their children (from left), Margaret, Lori, Betsy, Annette, Rusty and Andy move their belongings into the Spanish-styled house.

Trailer Club Outing Set for Munz Lake

The next business meeting of the NRC Travel Trailer Club has been set for June 18 at 7:30 p.m. at the clubhouse in Fullerton.

Plans will be discussed for the next outing of the club. It is a trip to Munz Lake set for the weekend of June 22 and June 23. Members, their guests and any Nortronics employees interested in travel or trailer club activities are invited to attend.

The lake is about 60 miles from Los Angeles by way of Elizabeth Canyon, and north on Highway 99 to Castaic.

Sensor Gyros Introduced

A new Nortronics product line of rate sensor gyroscopes—engineered and developed at the Precision Products Department in Norwood—has been introduced to the market.

The line includes two products which have been under development for five years:

The Dual Axis Rate Transducer (DART), and the Multi-Function Sensor (MFS). A version of the latter is an integral part of a Nortronics NIP-118 miniature inertial navigation system.

Both instruments and their applications were presented at a recent two-day Engineering-Marketing symposium at PPD. They have been marketed to a limited degree since 1964, and now the instruments are being readied for full scale production.

The DART/MFS product package has several advantages. It is less expensive than rate gyros of comparable performance, and smaller and lighter than equivalent gyros. In addition, DART/-MFS has the potential—through continued development—of being even smaller. For example, PPD engineers visualize, in the early 70's, a three-axis triple redundant gyro the size of a pool ball. That same package now is as big as a large melon.

The two instruments represent an unusual technological advance. Instead of the heavy metal wheel found in ordinary rate gyros, the DART sensing cell consists of long "paddle arms" rotating about an axis, and suspended in liquid.

Japan Hawk Program Established in Nagoya

Contractual agreements with Raytheon's Missile and Space Division have been accomplished and a new Nortronics organization established as further steps in implementation of the Japanese Hawk program.

Northrop Nortronics Nagoya, announced last week as Organization 6060, will have as its director Bill Rothwell, former program manager of the Hawk program at Anaheim. Chuck Barnard, also with the Hawk program in Anaheim, has been appointed project supervisor, reporting to Mr. Rothwell. Mr. Rothwell will report to Frank Lynch, Nortronics vice president and Anaheim manager.

Mr. Rothwell

Mr. Barnard

Nortronics is proceeding on the Japanese Hawk program under agreements with the prime contractor, Raytheon Corporation.

One type of agreement calls for the manufacture by Nortronics of Hawk launchers and loaders, wing assemblies and actuators for Raytheon.

The other contract area deals with software elements such as documentation, technical assistance in Japan, and backup support at Nortronics Anaheim.

The technical assistance will be provided to Mitsubishi Heavy Industries in Nagoya and to Fuji Heavy Industries in Utsunomiya, Japan.

An initial phase in the operation of Northrop Nortronics Nagoya will be to relocate those persons involved as technical assistance representatives of Nortronics. Those concerned with the move are the families of Mr. Rothwell, Mr. Barnard, Don Koehler and Chuck Stevens; and Bob Jones. They will complete the transition from Anaheim to Nagoya, Japan—200 miles southwest of Tokyo—by the end of summer. All are continuing Japanese language courses.

Mr. Rothwell emphasized the fact that "our working relationship since the mid 50's with Raytheon on the Hawk program, has been excellent. What is more, our working relationship with Mitsubishi Heavy Industries and Fuji Heavy Industries has involved mutual understanding and respect. We are looking forward to the same fine cooperation as the program continues."

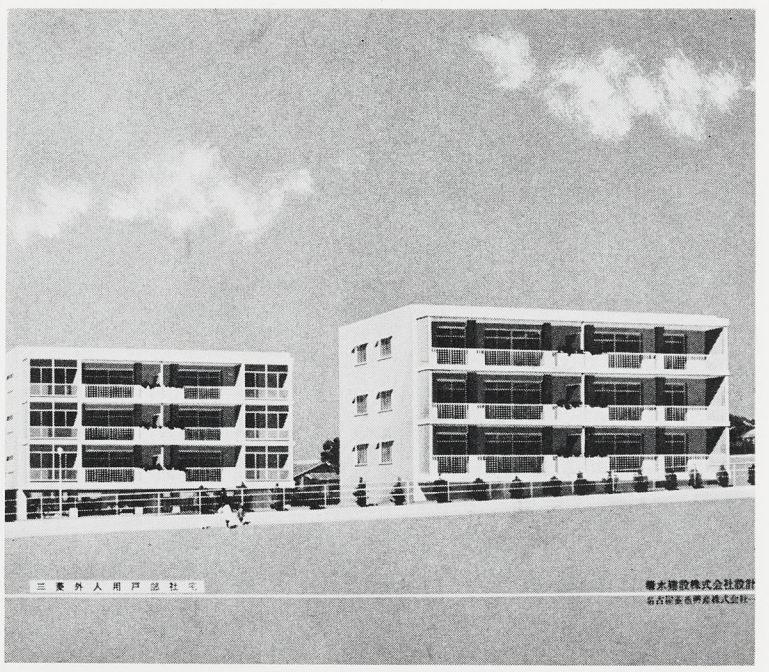
Dr. Owen Griffith Elected President Of School Board

A member of the senior technical staff in the Advanced Avionics Laboratory at Nortronics Hawthorne has been elected president of the Torrance Unified School District Board of Education.

Dr. Griffith

Dr. Owen Griffith, who has been with Nortronics for seven years, was unanimously chosen by incumbent members last year to fill a vacancy on the board created by the death of Dr. Kurt Shery.

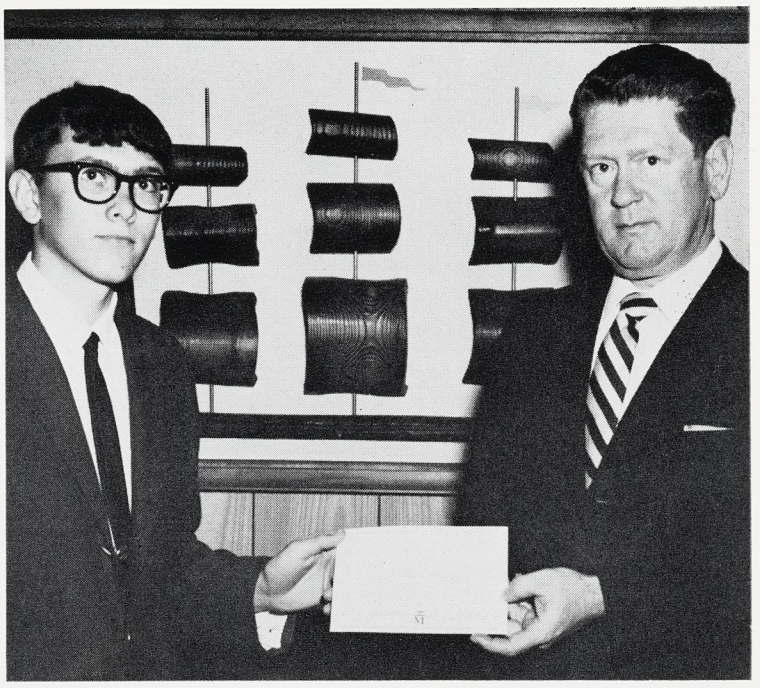
Dr. Griffith will serve as president for one year, and will be a member of the board until 1971.



MITSUBISHI TOBE APARTMENTS such as these in this Japanese artist's drawing will be home for most of the Nortronics technical assistance representatives assigned to the Japanese Hawk program in Nagoya. Apartment buildings like these have been built with American tenants in mind and contain such features as air conditioning, wall-to-wall carpeting and drapes.

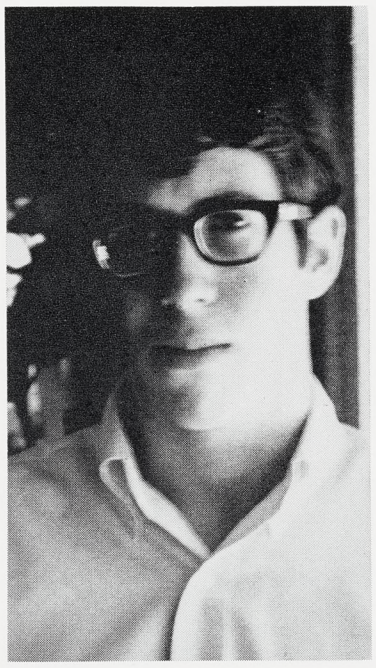
Employees' Sons, Daughters Receive Merit Scholarships

DUNCAN AGNEW, who plans to attend California Institute of Technology, receives his Northrop Merit Scholarship certificate from Roy P. Jackson, vice president and Norair assistant general manager. At left are Mr. and Mrs. George Agnew. An older brother, Carson Agnew, was a 1966 Merit Scholarship recipient.



GARY BELFORD, son of K. R. Belford, a Page Communications staff engineer, receives his certificate from Joseph A. Waldschmitt, Page president. Gary will major in electrical engineering at Carnegie Mellon in Pittsburgh. His father has been with Page for 15 years.

ROBERT PARKER, who will graduate this month from South High School, Torrance, holds a certificate he received from Frederick Stevens (left), vice president and Nortronics general manager. At right is Dr. William L. Parker of Nortronics Palos Verdes. Robert plans to attend the University of California at Santa Barbara.



JIM KORNELL, a senior at The Thacher School in Ojai, is one of two Northrop Ventura recipients. His father is Hal Kornell. Jim, who has participated in athletics, drama, debate and other activities, will attend the University of California at Santa Barbara.

NANCY EWING, daughter of Paul Ewing of Northrop Ventura, is presented her certificate by Welko E. Gasich, vice president and Ventura general manager. At left is Mrs. Ewing. Miss Ewing plans to attend Occidental College in Los Angeles, where she will major in foreign languages.

MICHAEL STAMP, son of Howard Stamp (right) of Norair, receives his scholarship certificate from Roy P. Jackson, vice president and Norair assistant general manager. He plans to attend Massachusetts Institute of Technology. He attended Reseda High.

GERALDINE FITZPATRICK, daughter of Mr. and Mrs. Enmett Fitzpatrick, is presented a scholarship certificate by Roy P. Jackson, vice president and Norair assistant general manager. She will enroll at California State College at Fullerton.

THOMAS COATES, who will attend California Institute of Technology, receives a scholarship certificate from Roy P. Jackson, vice president and Norair assistant general manager. He is the son of Mr. and Mrs. Thomas L. Coates.

HOW IT IS MADE—Stan Peterson (left) and John Oliver, Northrop's administrator of Product Licensing, explain to two manufacturers the use of Northrop-developed material for making dies for stretch forming operations. Northrop annually mans booth at Los Angeles Product Licensing Opportunity day to offer inventions and methods to would-be producers.

Patenting, Licensing Groups Aid Employees

Careful Evaluation, Analysis Given To Every Invention Submitted for Study

Northrop Corporation's creative muscle—advanced technology—relies on imaginative personnel who design and develop products which make possible the company's diversified operations.

Beyond this mainstream of business there often occur opportunities for exploiting byproducts with market value of their own. Some result from extensive research and development, others from individual initiative.

Since Northrop encourages employees to create new and useful ideas, it provides special means for sharing profits that may result from such personal initiative.

Employee suggestion programs are best known among these.

Northrop's Patent Award Plan offers another form of reward. Product Licensing, still another.

Administered by Willard Graham and John Oliver, respectively, these closely related, but separate, Corporate functions serve all Northrop divisions and subsidiaries.

In addition to serving Northrop's interest, the two organizations combine to offer highly specialized assistance to individual employees.

For example, an employee has an invention he feels has merit and submits it for consideration.

Experts evaluate his invention to ascertain its practical application, its possible patent potential, its possible value to Northrop, its merit as a product for an outside firm.

If this analysis warrants a patent application, the inventor receives $50 when it is filed; another $50, if it is granted.

He also becomes eligible to share in all gross receipts Northrop may realize from licensing or sale of his invention. This amounts to 20 per cent of the first $25,000; 10 per cent of the next $75,000; and 5 per cent of all returns in excess of $100,000.

Mr. Graham reports his Patent personnel study an average of 200 items annually. This leads to seeking patents on an average of 35 items.

"We are always in the market for inventions," Mr. Graham said. "Our office in the Hawthorne complex or Patent representatives at each major facility are available to discuss a potential patentable invention at any time."

Mr. Oliver reports his Product Licensing staff has reviewed more than 1,500 individual licensing prospects over the past 15 years and has placed some 300 of these for manufacture outside Northrop.

"This ratio is high when compared to national averages," Mr. Oliver said. "It speaks highly of the ingenuity of those creating the products."

Examples of successfully marketed products include the NORSIGHT aiming device now in use on aircraft and spacecraft; DYCHEK, a chemical dye penetrant type of inspection; the Heliarc method of welding; a quick disconnect device for externally hung aircraft items; bonding techniques, many plastic developments and others.

Personal contacts account for most placements of products for manufacture in outside firms. Product Licensing works closely with Northrop Purchasing organizations and the vendors who supply materials and components to Northrop facilities. In addition, the organization has an extensive list of companies that specialize in new products.

Northrop Corporation currently has more than 100 domestic and foreign license agreements in effect, Mr. Oliver reports.

IT'S A FACT AT NORTHROP

A striking example of Northrop's worldwide operations in the communications field is provided by the distribution achieved by The Hallicrafters Company, Northrop's Chicago-based subsidiary, for its Village Radio (International Communications) systems.

Dozens of nations are reaping the benefits of modern communications through use of Hallicrafters Village Radio equipment.

As an indication of Northrop's worldwide scope of operations, here is a list of countries which use the Hallicrafters Village Radio systems:

Middle East — Iran, Turkey, Jordan and Israel.

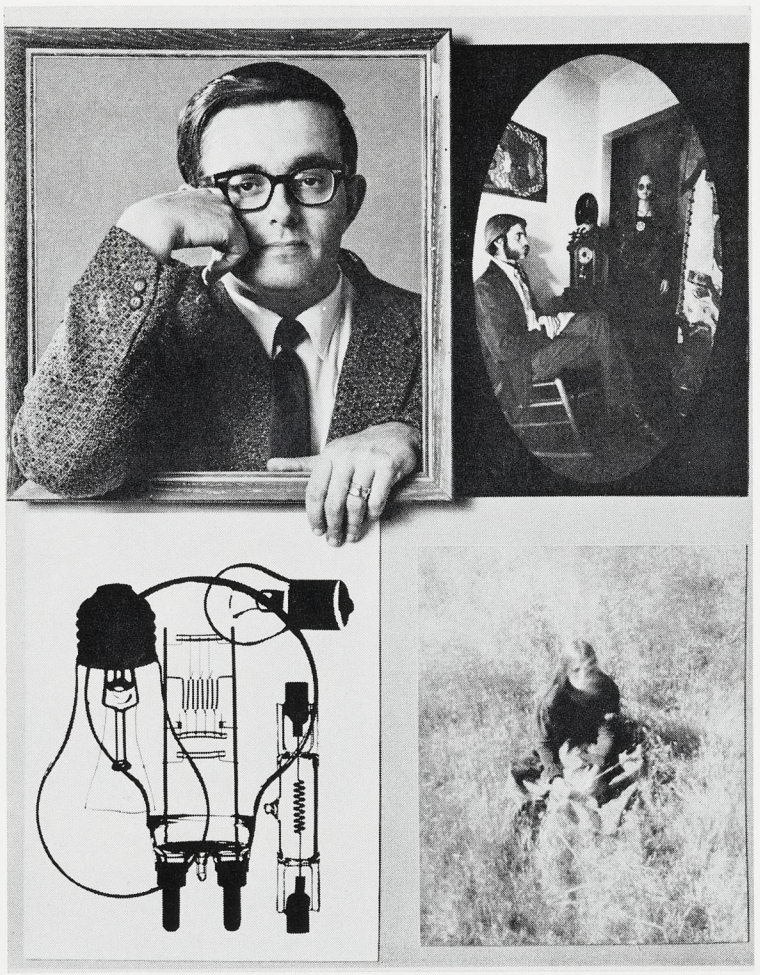
Southeast Asia — Vietnam, Thailand, Indonesia, Pakistan, Burma, Korea, Laos, and Nepal.

Pacific area—Taiwan and The Philippine Islands.

Caribbean—Jamaica.

Africa—Tunisia, Chad, Ivory Coast, Rwanda, Ethiopia, Somalia, Congo, Central African Republic, Upper Volta, Niger, Dahomey, Burundi, Liberia and Nigeria.

South and Central America — Guyana, Chile, Peru, Brazil, Guatemala, Colombia, Ecuador, Uruguay, Bolivia, Panama, Honduras, Costa Rica and El Salvador.



WINNING TECHNIQUE—Jim Crowley (upper left), a Northrop Ventura photographer, won a $100 prize last month with the photo in the upper right. The picture at lower right won him $50. Both prizes were awarded in the annual Photography West competition. The pictures were taken utilizing the "pinhole" technique, which involves the use of a small hole, instead of a lens.

Discounts Available For 'Oppenheimer'

Discount tickets for four performances of "In the Manner of J. Robert Oppenheimer" at the Mark Taper Forum, Los Angeles Music Center, all still available throughout Northrop facilities.

The tickets are for June 16, 23 and 30 and July 7 at the 7:30 p.m. performance. Regular $6.30 seats are available through NRC for $3.50 each.

'Potluck' Dinner Set

Northrop's Wanderers will feature a "potluck" dinner when they gather at 7 p.m. tonight at the Hawthorne Memorial Park, Hawthorne.

Following dinner in the picnic area, a short business session will be held.

Northrop To Participate In Training of Unemployed

Northrop Corporation has been selected by the U.S. Labor Department's Manpower Administration to assist in the schooling of the hard core unemployed for industry jobs.

The program, for people in the Venice area, will begin in September.

It will be administered by L. H. Walton, Norair chief of Personnel Development and Training.

The program, Mr. Walton said, calls for the recruiting of 700 men and women from the Venice area for remedial education (reading, writing, arithmetic) and on-the-job instruction.

The recruits are expected to reach a level which will qualify them for assignment in Northrop's aircraft assembly facility.

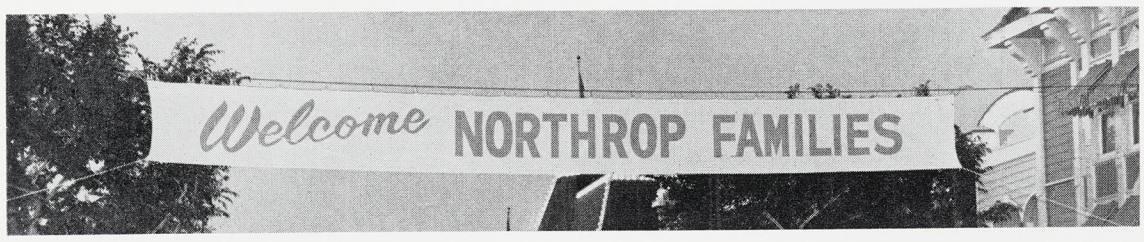
Los Angeles is one of five cities participating in the nationwide program, designated as MA-2 by the Manpower Administration. The other cities are Chicago, Boston, Washington, D.C. and San Antonio.

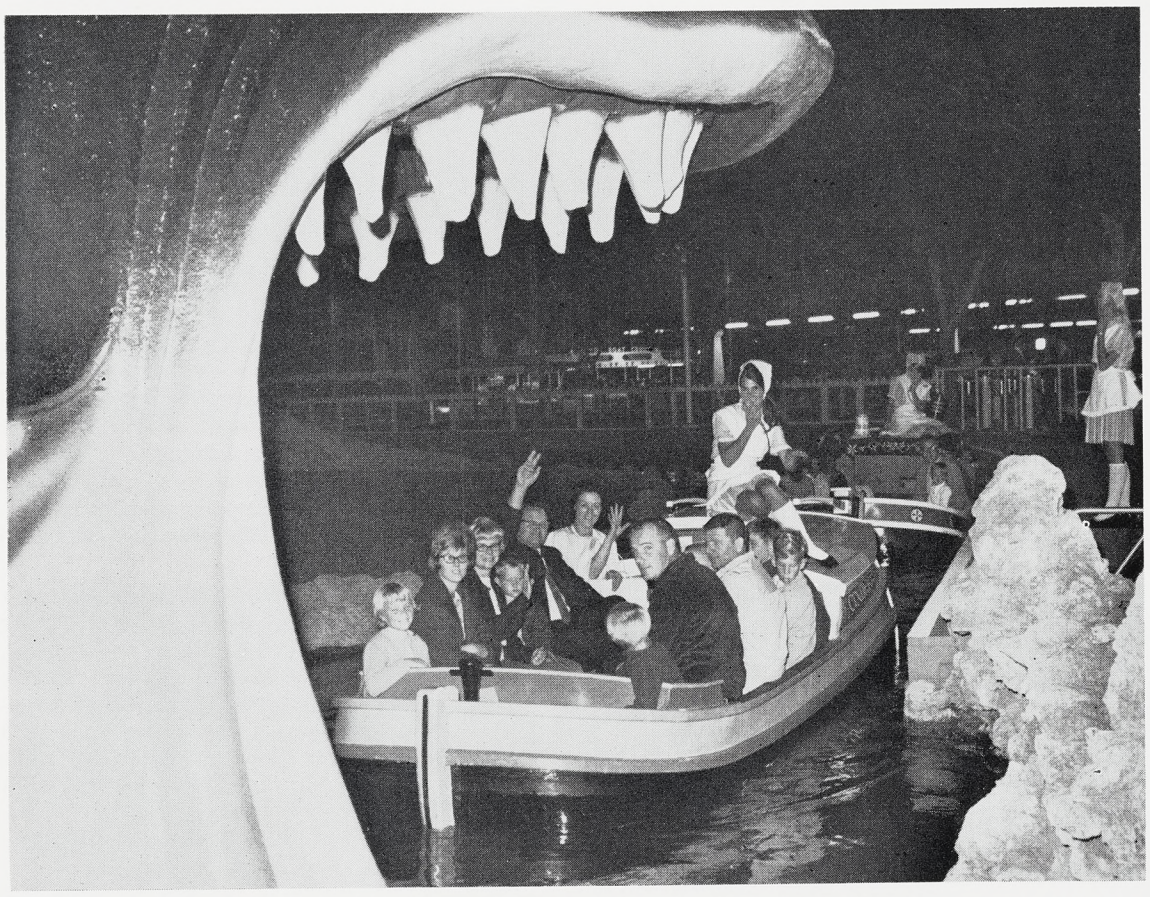
Mr. Walton explained that MA-2 is a follow-on from MA-1, a similar undertaking previously carried out by private agencies, in which the trainee was reimbursed through a government

(See TRAINING, page 5)

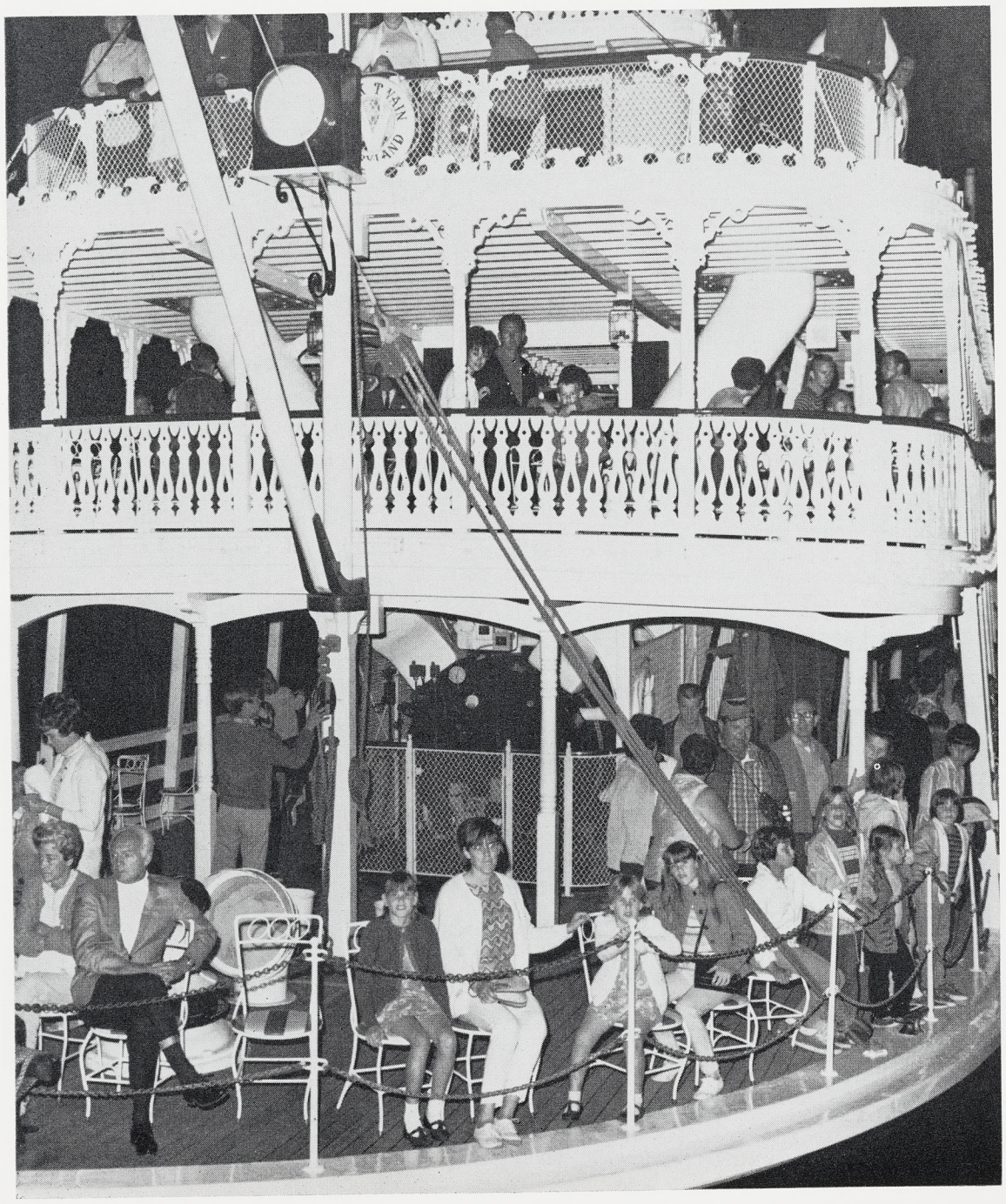
FROM NEAR AND FAR, an estimated 80 retired Northrop employees and their spouses converged on the Alondra Club May 15 for the second annual Northrop Retirement Club reunion. They heard William Larrabee, retired Northrop vice president. In the left foreground is Norbert Lorentz, first president of the Club.

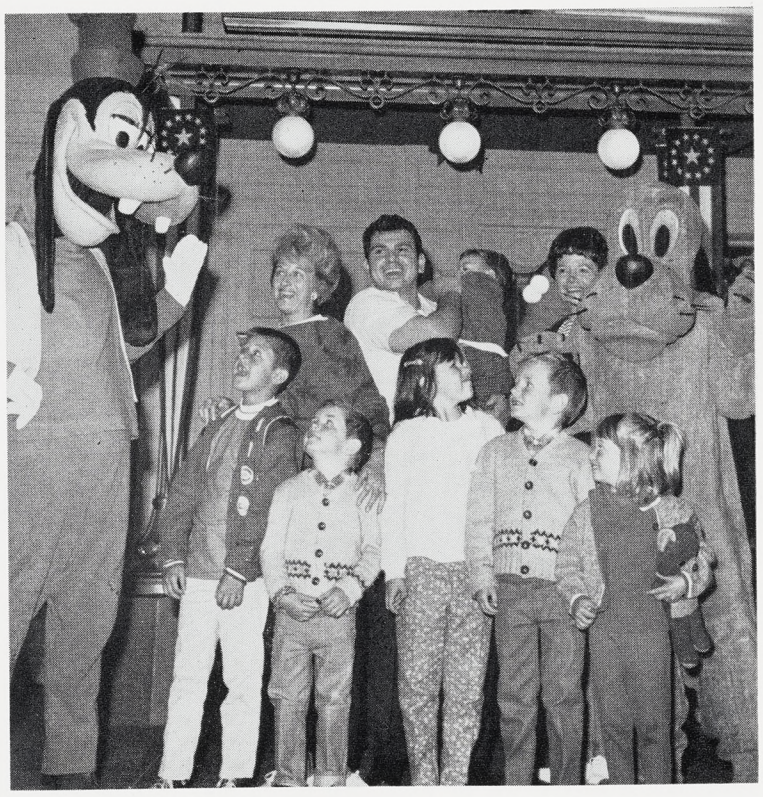
Disneyland Night Has Record Turnout

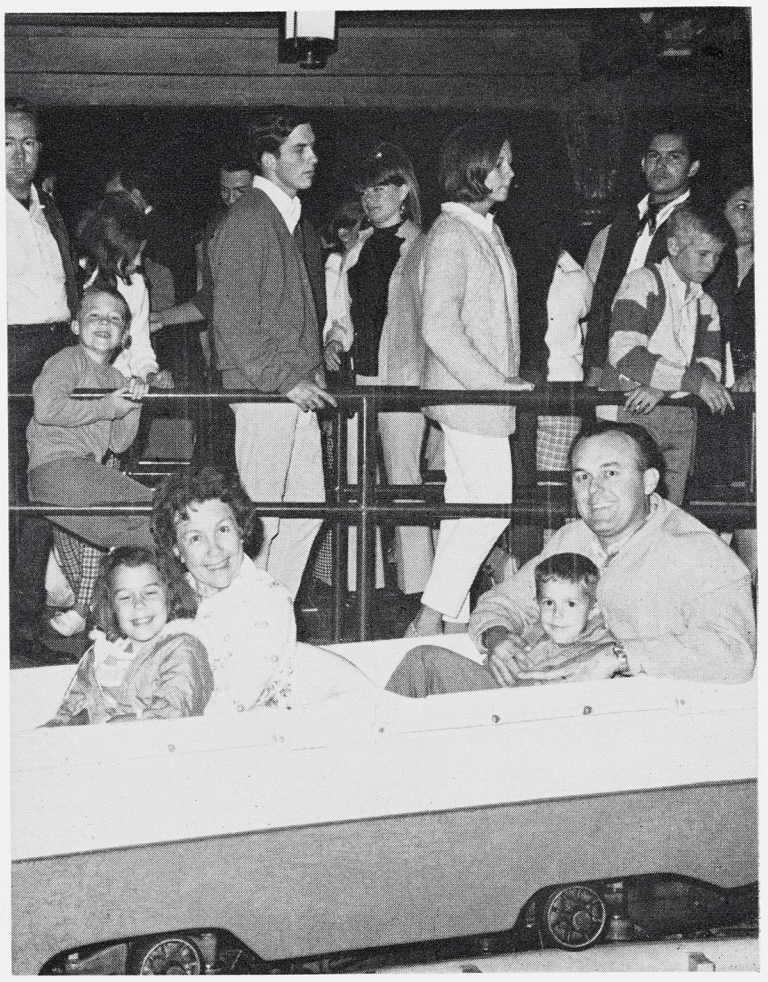




DISNEYLAND OPENED WIDE again this year for thousands of Northrop families who attended Northrop Night at Disneyland. The NRC-sponsored event attracted 15,969 to an evening of unlimited rides and family fun, in what was the largest company-wide turnout since the beginning of the annual activity. Larger-than-life Disney characters greeted the guests, charming children and adults. One of the features enjoyed was the recently re-opened Tomorrowland.







Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Rambler, 1959 4-dr. sedan, stick shift, 6-cyl., $275. 213-644-2885. A

Model A, 1931 Tudor sedan Deluxe, $350. 213-249-6222. A

Porsche, 1965, 356c coupe, $3,800. 714-595-2797. A

Rambler, 1965, American, p/s, r/h, stereo, $1,050; w/out stereo, $1,000. 714-871-2749, 714-524-2146. A

Chevrolet, Nova, 1966, 4-spd., $1,550. 213-862-3027. A

Buick, 1954, new tires & brakes, $150. 213-672-6549. A

Pickup Truck, 1950 Chevrolet, $275. 213-324-2942. A

Buick, 1963 Skylark, p/s, V-8, auto. trans., $1,100. 213-830-6163. A

Jaguar, 1960, 3.8 Mk. II, 700 miles on reblt. eng., $900. 213-644-6382. A

Volkswagen, 1966 sedan, 24,000 miles, a/c, $1,500. 213-378-7479. A

Volkswagen camper 1500, 1966, 75-lb. refrig., extra 3rd seat, $2,100. 213-831-6560. A

Comet, 1961, 4-dr. Deluxe sedan, auto. trans., $400. 213-678-0250. A

Chevrolet, 1964 Super Sport convt., a/c, p/s, p/windows, 4-spd., 327 eng., $1,350. 213-373-3669. A

Ford, 1959 2-dr., r/h, p/s, $295. 213-679-6602. A

Mustang, 1967 convt., p/s, r/h, 3-spd., auto., $300 & take over $85 mo. pymts., $1,800 approx. bal., 213-677-4342. A

Pickup Truck, 1953 Chevrolet ½-ton, $400. 213-672-4450. A

Pickup Truck, 1959 Chevrolet, ½-ton, 6-cyl., 3-spd., $550. 213-545-4964. A

Dart, 1964 GT, 4-spd., floor shift, r/h, $1,100. 213-372-5367. A

Pontiac, 1957, $200. 213-393-4315. A

MGA, 1961, model 1600, new tires, seat & cover, r/h, $950. 213-673-3916. A

Corvair, 1960, auto., r/h, $199. 213-246-4495.

Cadillac, 1954, convt., new nylon top, $250. 213-663-6402. A

Ford, 1947 Woody, comp. reblt. Chev. 283, elec. fuel pump, extras, $600. 213-679-1657.

International, Travelall, 1966, V-8, auto. trans., p/b, p/s, a/c, r/h, $2,200. 714-537-6243. A

Comet, 1960, 2-dr., auto., r/h, $225. 213-894-8490. A

T-Bird, 1966 Town Landau, $2,995. 213-235-4591. A

Malibu, 1968 2-dr. sport cpe., p/s, a/c, 4-spd., $3,150. 213-371-5124. A

Austin Healey, 1960 Sprite, Pirelli tires, new brakes, console, radio, $650. 213-378-2810. A

Jaguar, 1966 XKE, roadster, p/disc brakes, knock-off chrome wire whls., $3,700. 213-379-3487. A

Station Wagon, 1965 Ford Fairlane 500, r/h, p/b, p/s, 289 eng., $1,550. 213-676-1584. A

TR-3, 1959, good tires, o/drive, $275. Box 1101. A

Station Wagon, 1959 Ford, 2-dr., 6-cyl., r/h, $100. 213-377-7241. A

Cadillac, 1953, $135. 213-329-5986. A

Station Wagon, 1965 Falcon, 2-dr., V-8 eng., auto. trans., p/s, r/h, $1,350. 714-962-4134. A

Volkswagen w/sunroof, 1957, new eng., radio, good tires & batt., $375. 213-657-3074. A

Rambler, 1967 American, 8,000 miles, $1,900. Box 1102. A

Ford, 1966 Galaxie 500, 4-dr., 39,000 miles, p/s, p/b, a/c, r/h, 320 eng., $1,750. 213-377-6471. A

Chevy II, 1963 Super Sport, 6-cyl., auto. trans., new brakes, tires, $850. 213-644-5852. A

Dodge, 1964 Custom 880, 4-dr., 383 V-8 eng., fact. air, auto. trans., AM-FM radio, extras, $1,095. 213-673-4698. A

Thunderbird, 1955, auto. trans., new paint, p/s, p/b, p/w, $900. 213-379-8543. A

Buick, 1965 Skylark spt. cpe., power, a/c, $1,595. 213-675-5732. A

Ford, 1964 Falcon van club wagon, auto. trans., r/h, 6-cyl., $1,350. 213-377-3487. A

Pontiac, 1967 GTO, 10,800 miles, turbo hydro, p/s, $2,850. 213-534-3410. A

Volkswagen, 1966 model 1300, r/h, s/belts, $1,450. 213-989-1929. A

Volkswagen, 1964, less than 2,000 miles on reblt. eng., $1,050. 213-677-2034. A

Station Wagon, 1959 Rambler, fact. air, r/h, good tires, $225. 714-633-6325. A

Lincoln, 1957, needs trans. work, $50. 213-833-2512. A

Pickup Truck, 1966 Ford, ½-ton, long bed, V-8, custom cab, w/camper, will sell separately, $1,750. 714-524-0388. A

Dodge, 1963, std. shift, r/h, 4-dr., 6-cyl., $575. 213-678-8864. A

Automobiles For Sale

Volkswagen, 1968, 2,400 miles, r/h, $1,800. 213-679-5212. A

Station Wagon, Dodge 6-pass., air, auto., p/s, p/b, 383 eng., $1,200. 213-831-4586. A

Corvair Monza, 1963 Spyder convt., r/h, 4-spd., turbo charge, $600. 213-374-2135. A

Household Items For Sale

Recliner Chair, Empire, $35. 714-875-8495. B

Table, flip top, game or dining, open 38x76, closed 38x38, white formica, 4 chairs, $125. 213-759-5053. B

Couch & chair, turquoise, Naugahyde, $60. 213-679-9821. B

Couch, Riviera, new mattress & seat cushions, $50. 213-398-0968. B

Range, Western-Holly, broiler, griddle, auto. oven, $35. 213-838-3255. B

Fryer, deep-fat, Empire, auto., $4. 213-675-8813. B

Barstools, 3 distressed w/brass rail, $30. 213-374-3060. B

Table Lamp, 3-way, milk glass, maple base, $15. 213-675-5522. B

Twin Bed, mattress & box springs, maple, 4-poster, $50. 213-672-8468. B

Chair, captain's type, red vinyl, $15. 213-374-2996. B

Sofa, 100″, tapestry uphol. & maple rocker, other pcs., $300. 213-675-8829. B

Carpeting, red pebbletex, 8x10, $25. 213-343-7880. B

Dressing Table, baby's, w/4 wicker baskets, $8. 213-835-3869. B

Stove, 2-burner, closed top, elec. portable, Universal, used 5 times, $5. 213-644-3084. B

Range, 36″, gas, grille, lights, window oven, clock, $25. 213-329-9186. B

Couch, 9′ avocado green, $50. other items. 213-677-3471. B

Washer, Kenmore auto. w/sud saver, $50. 714-521-5258. B

Stove, Gaffers-Sattler, 1½ yrs. old, copper, 31″ wide drop-in type, $75. 213-542-1141. B

Washing Machine, Kenmore auto., 8-cycle, $100. 213-675-8068. B

Washer & Dryer, G.E. Filter Flow, $275 213-678-1649. B

Cocktail & end tables, $35. 213-833-8436. B

Refrigerator, General Electric, $30. 213-329-3721. B

Miscellaneous For Sale

Gun, Remington 700 BDL, 7mm mag. w/Redfield 3X-9X scope, fired only 20 rounds, incl. 2 boxes of new fact. ammo & 1 box of once-fired brass, $240. 213-596-0521. C

Piano, Lyon & Healy baby grand, apt. size, mahogany, $480. 213-644-4258. C

Bicycle, boy's, 26″, $10. 213-379-3134. C

Guitar Amplifier, Vox Cambridge reverb., $115. 213-596-5634. C

Yamaha, 1968 Scrambler, 305 cc, 5-spd. trans., many extras, $550. 714-774-3815. C

House, 3-bdrm., dps., 2 miles from Norair, $23,900. 213-675-0647. C

Exercisor, bicycle type, $7. 213-431-7696. C

Bicycle, Sears 26″ tandem, 2 children's seats, $60. 213-294-0541. C

Table Saw, Craftsman, 8″ blade w/stand, 1 h.p. elec. motor, $80. 213-370-6896. C

Bicycle, girl's 24″, med. wt., $10. 213-328-3306. C

TV, 21″ color, console, $250. 213-255-6625. C

Muffler for Volkswagen, 40 h.p. eng., $10. 213-823-4167. C

Relaxacizor, 4-dial model w/all attachments, $100. 213-328-6662. C

Home, 4-bdrm., recently painted in & out, 40x20 heated pool, cpts., dps., professional landscaping, on lge. corner lot, $48,500. 213-832-4472. C

Honda, 1967 S-90, luggage rack, rock guard, other extras, $240. 213-645-1274. C

Townhouse, 4-bdrm., 1¾ bath, dble. gar., pool, rec. center, cpts., dps., bltin stove, $2,000 equity, 5¼% FHA loan, $18,500. 714-962-2529. C

Motorcycle, Honda 150, elec. starter, $250. 213-325-3724. C

Coat, wool, beige, size 10, $27.50. 213-674-6076. C

Tack Room, 8 ft. by 9 ft., $50. 213-320-5534.

Boat, 16′, 75 h.p. Mercury outbd., new paint & motor o/haul, $1,095. 213-329-1657.

Record Player, for auto, A.R.C. 2500, $35. 213-644-6061. C

Water Ski, Vogue Slalom, full banana-style, $20. 213-630-4188. C

Record Player, reconditioned w/support base, changer for all std. speeds, $15. 213-370-7092. C

Planimeter, K&E #62 0000 Compensating Polar, used once, $30. 805-498-3549. C

Prom Gown, aqua blue chiffon, elbow length pleated sleeves, empire style, size 7/8, $20. 213-755-7255. C

Tape Recorder & playback, Sony 260 stereo, bltin speakers, little use, $175. 213-472-2031.

Air Conditioner, Friedrich 10,200 b.t.u. refrigerated, window or wall-type, 1 yr. old, $175. 213-882-0761. C

Organ, Conn deluxe, electronic, w/bench, $1,100. 213-675-0521. C

Home, 3-bdrm., family rm., 1¾ baths, custom, Early American, $43,500. 213-372-2759.

Lots, 2, Inglewood Park Cemetery, $750. ea. & pay deed transfer or $1,450 for both. 213-756-9342. C

Miscellaneous For Sale

House, 3-bdrm., 2 baths, cpts., dps., sprinklers, 5 min. to Northrop, $24,500. 213-321-1655. C

Acreage, 10 acres, in Saugus near Fwy. 14 & campgrounds, $5,500. 213-654-1242. C

Gun, Ruger 22 Single Six, 22 or 22 magnum, 6½″ barrel, l. or r. hand holster, 1 yr. old, $85. 213-336-8046. C

Jewelry, white onyx beads & earrings set, $8.50. 213-378-1863. C

Metal-Mineral Locator, Detectron, $125. 714-539-2098. C

Home, 3-bdrm., 2 baths, lge. family rm. w/fireplace, beam ceilings, wood paneled den, bltins, d/washer, patio, Rolling Hills Ests., $41,900. 213-373-3142. C

Piano, spinet, Baldwin Acrosonic w/bench, walnut, $450. 213-379-1261. C

Gun, .25 auto. Czeck, Model CZ, $30. 213-375-4312. C

Transmitter, Heathkit CW w/VFO, $15, other radio equip., various prices. 714-639-4438. C

Sailboat, Cal 20, many extras, $3,600. 213-373-3363. C

Surfboard, Rick's, 9′11″, 2-spd. skag, $80. 213-675-5701. C

Honda, 1963, 305 Super Hawk, reblt. eng., $225. 213-673-5587. C

Belt Sander, on stand, $100. 213-865-5084.

Home, 4-bdrm., fam. rm., dining rm., rec. room, cement slab patio front & rear, 2-car gar., $33,500. 714-495-5516. C

Piano, upright, $100. 213-676-0041. C

Trailer Hitch, E-Z Lift, used once, $50. 714-827-9356. C

Home, in Garden Grove, 4-bdrm., 2 baths, repainted inside & out, lge. fenced yd., 2-car gar., $21,995. 714-842-4049, 213-581-5208. C

Motorcycle, 1967 Suzuki, 120 cc, $350. 714-638-4014. C

Rifle, H&R single shot, w/interchangeable barrels, $40. 213-783-3054. C

House, 4-bdrm., 1¾ bath, elec. kitchen, insulated, b/wall, enc. patio, bltin b-b-que, fireplace, sprinklers, 15 min. to Northrop, $28,000. 213-320-6975. C

Honda, 1965 305 Super Hawk, many extra parts, $300. Box 1103. C

Bicycle, 10-spd. Schwinn Continental, $50. 805-495-4304. C

Catamaran, 18′, fiberglass, stainless steel rigging, alum. mast, 1½ h.p. Seagull motor, $400. Box 1104. C

Precision Tools, .0015-.025 gauges, adj. parallels, many other tools, $100 or sell sep. 213-329-9484. C

Mini-Bike, 1967 Bonanza, 3 h.p., many extras, $85. Box 1105. C

Microscope, biological - type, mechanical stage, 50, 100, 400X eyepieces, $55. 213-322-7869. C

Amplifier, piggy-back 6-10″ speakers, $225. 714-842-5281. C

Mini-Bike, 8 h.p., lights, horn, dual tanks, racing seat, $135. 213-393-5649. C

Aquarium Pump, Silent Giant just o/hauled, Lustar auto. fish feeder, $10 ea. 213-372-1632. C

Boat, Lido, 14′ complete w/cover & trailer, $1,200. 213-454-4372. C

TV, 23″, b&w, Packard Bell consolette, wood cabinet, $25. 213-363-6617. C

Home, 3-bdrm., 2 baths, 16x36 pool, lge. covered patio, bltins, cpts., dps., 75x167 lot, $45,000. 213-375-8778. C

Partition, floor-to-ceiling, filigree panels, unfinished w/hardware, 40″ wide, $10. 213-293-5993. C

Houses, 2 on a lot, main street in Hesperia, $29,500. 213-378-2193; 714-244-2129.

Boat, 14′, Dorsett, 45 h.p. Mercury motor & ski, $450. 213-532-6497. C

Honda, 1965 S-90, new tires, $200. 213-320-3529. C

Motorcycle Jacket, tailor-made ladies' size 38 w/boots, helmet & men's size 40, $100. 213-676-5101. C

Radio Direction Finder, portable transistor, 3-band beacon, marine & std. model Nora Tec pilot pal, 1 yr. old, $30. 213-532-7381.

Air Conditioner, evaporation-type & swamper, 110V, $15. 213-869-2673. C

Sloop Rig, Firefly class, 12′ pivoting centerboard, trailer, $595. 213-377-5862. C

Horse, 8 yr. old gelding, ½ quarter, ½ Arabian, sound, experienced rider only, $500. 213-644-2717. C

Wedding Gown, full-length Bianca w/chapel train, silk organza w/lace & seed pearl bodice, size 12, $35. 213-675-4553. C

Tires, 2 Inglewood tire pos-a-traction, 8.15-15, 7″ wide, $28 ea. 213-675-2813. C

Quarterhorse, registered mare, half thoroughbred, 4 yrs. old, $750. 213-534-0060. C

Lawnmower, rotary, Cyclone, 3 h.p. 4-cycle Briggs & Stratton quick start eng., catcher, 1 yr. old, $35. 213-423-4837. C

Sailboat, 8′ Sabot, fiberglass hull, never been in water, $65. 213-327-8927. C

Honda, 1965 CB-177, 305 cc, $350. 213-547-4689. C

Speed Boat, 1968, 14′, 40 h.p. Mercury elec. motor, tilt trailer, $750. 213-679-1550.

House, 2-bdrm., stucco, full dining rm., lge. kitchen, fireplace, $18,500. 213-671-6187. C

Wanted to Buy

Dimes, silver & quarters, will pay 7½% over face value. 213-277-0190. D

Bicycle, girl's, 20″, Sting Ray in good condition. 213-375-6463. D

Wanted to Buy

Mini-Bike, 3 h.p. or over. 213-371-7274. D

Panel Truck, 1935-1940 Ford or Chev. 213-632-2642. D

Mini-Bike, Taco 44 or equivalent. 213-696-3467. D

Engine, 283 or 327 Chev., complete. 213-371-7382. D

Cement Mixer, used, electric or gasoline. 714-633-5826. D

Drafting Machine, prefer left-hand model. 213-372-1641. D

For Trade

Mountain Boots, 8″, size 9½D, trade for used camper ice box. 213-328-5655. E

Free (To Be Given Away)

Pup, mixed terrier, black, 2 mos. old. 213-675-8891. F

Dog, German shepherd, blonde, male, needs good home. 213-376-3533. F

Rentals Offered

Camping Trailer, 14′, Scottsman, sleeps 5, $35 wk. 714-528-3533. G

Apt, 1 person, furn., utilities pd., 5 miles from Northrop, pool, $100. 213-671-9598. G

Cabin, A-frame, furn., sleeps 5, 40 miles west of Colorado Springs, close to stream & lakes, $70 wk. 213-894-1937. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Cabins, Lake Gregory & Crestline, sleep 6, make reservations now, $25 w/ends; $60 wk. 213-391-2040. G

Apt, small, modern, on Catalina Island, walking distance to bch., bicycle to use, 2 adults, $65 wk., 2 adults & 2 children, $80 wk. Box 1106. G

Bachelor Apt, furn., close to Northrop Norair, $75. 213-676-5921. G

House, 3-bdrm., 2 baths, ocean view, near beach, $175 wk. 714-492-1068. G

Cabin, Lake Arrowhead, close to lake & village, fireplace, patio, $60 wk. 213-761-9645. G

Rentals Wanted

House, 2-bdrm., Inglewood or Hawthorne area, 2 small children, reasonable, before June 30. 213-830-2915. H

Child Care

Child Care offered, weekly, fenced yd., hot lunches, all ages. 213-370-9652. I

Child Care offered, my home, Gardena. 213-324-2107. I

Personals

We wish to thank our many friends at Nortronics & Norair for their many acts of kindness & expressions of sympathy on the loss of my husband, Bill Lane. They were of such comfort, are deeply appreciated & will be fondly remembered. SUZETTE LANE & CHILDREN. L

Sincere thanks to my many friends at Northrop for their heartfelt thoughts & concern in the recent loss of my mother. LUCILE BINNING. L

The many friends & former co-workers of Charles & Ethel Root are saddened by his death on April 29 in Portland, Ore. Sincere sympathy to Ethel & family. L

Lady, would like to share home & household expenses w/Christian lady, preferably retiree. 213-371-3405. L

I wish to express my sincere appreciation for your thoughtfulness during my husband's illness & his death. BELLE MOLLE. L

We wish to express our gratitude for the flowers, cards & kind expressions of sympathy in the loss of our father. WALLY KUEGEMAN & FAMILY. L

I wish to thank all my friends at Northrop for the cards & plant sent to me during my recent stay in the hospital. Your thoughts were appreciated. L. V. LEMIRE. L

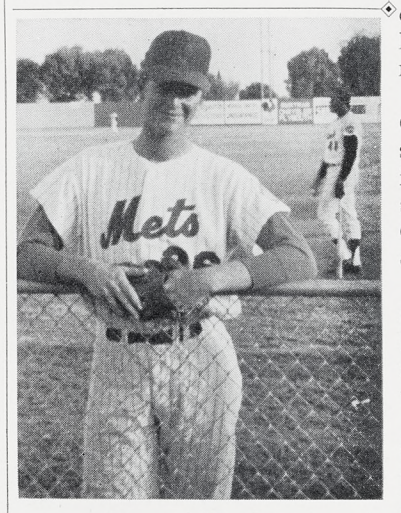
My deepest gratitude to all who are showing concern—prayers, visits, gifts—for my daughter Peri after her accident. MARIANNE McMILLAN. L

For Sale or Trade

Cabin Cruiser, 25′ Hunter, $1,300 or consider trade on auto. 213-320-6685. M

Ski Boat, 16′ Jav-Lin, rideguide, 80 h.p. Merc. outbd., extras, trailer, $995 or trade for fishing boat, 16′, w/40 to 60 h.p. outbd. 213-944-3794. M

Lot, lge. residential, Palos Verdes Estates, $23,500 or trade for R-3 property. 213-541-1226. M



Bruce Harkey

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Hawthorne & Broadway, Inglewood. Diana Peterson, Norair ext. 5166, 213-679-9331.

Yukon Ave. & 171st St., Torrance. Will walk to Crenshaw or Prairie Ave. Ride wanted especially in mornings. David R. Miller, Norair ext. 2004, 213-329-9303.

8 a.m. — 4:45 p.m.

William Dr. & Jenny, Newbury Park. Dr. H. W. von Guerard, Northrop Ventura ext. 1258, 805-498-3768.

Near Robertson Blvd. & Cattaraugus, Los Angeles. Susan Gold, Norair ext. 1314, 213-837-7524.

TRAINING

(Continued from page 3)

stipend.

Under MA-1 the agency trained the unemployed for possible placement with various industries. MA-2 will train the workers as employees of the firm that does the schooling.

The announcement of the MA-2 assignment brought from Mr. Walton the comment that in the past 15 months Northrop has given industrial training to 3,571 persons while professional and/or supervisory training was given to 1,371 others. That represents some 330,000 hours, he noted.

MA-2 is in keeping with the objectives of the National Alliance of Businessmen, established at the request of President Johnson and headed by Henry Ford II.

Northrop President Thomas V. Jones is a district chairman of hard core unemployed hiring for the Alliance, and Robert R. Miller, Northrop senior vice president, is a district vice chairman.

Air Force Major Logs 1,000th Hour In Northrop F-5

Major Billy B. Gilbert, USAF, last month became the first pilot to log 1,000 hours of flight in the Northrop F-5 tactical fighter.

Major Gilbert, an instructor pilot with the 4441st Combat Crew Training Squadron, Williams AFB, Arizona, set the new Air Force record on a 70-minute sortie to Peterson Field, Colorado.

Since entering the Air Force in 1957, Major Gilbert has logged over 2,970 hours, including 317 combat hours over South Vietnam.

Employee's Son Signs With New York Mets

The son of an electronics assembly inspector at Anaheim has signed with the New York Mets baseball club.

Bruce Harkey, whose mother is Rebecca Harkey in the MK-7 assembly area, is a former pitching star from La Habra High School where he had a 7-2 record during his senior year of league competition, and an earned run average of .86.

The 19-year-old, 210 pound, 6-5 right-hander spent 30 days in spring training at the Mets' camp in St. Petersburg, Florida. He has since been assigned to the Visalia, California, farm club, a member of the class A California League.

"We were so happy for him to sign," said Mrs. Harkey, "because it has been his ambition to play major league baseball since he was eight years old."

Bruce was first drafted by the California Angels, but was unable to come to terms with the team. He was later claimed by the Mets in a special draft.

Sons, Daughters Receive National Merit Scholarships

Six sons and four daughters of Northrop Corporation employees have been named winners of National Merit Scholarships for the 1968-69 school year.

This brings the number of Northrop-sponsored scholarships active for the next school year to 36.

Four of the winners are from Norair families; three, from Nortronics; two, from Northrop Ventura; and one from Page Communications.

(See photos on page 2)

The scholarship recipients are Duncan Agnew, Thomas Coates, Geraldine Fitzpatrick and Michael Stamp, Norair; Robert Parker, Gail Blythe and Lou Cinda Holt, Nortronics; Nancy Ewing and Jim Kornell, Ventura; and Gary Belford, Page.

Duncan Agnew, son of George E. Agnew, plans to attend California Institute of Technology, where he will major in physics. His brother, Carson Agnew, was a 1966 scholarship winner.

Thomas Coates, son of Thomas L. Coates, also will major in physics at CalTech. He was a district president of the California Scholarship Federation.

Geraldine Fitzpatrick, daughter of Emmett Fitzpatrick, will major in liberal arts at California State College at Fullerton.

Michael Stamp, son of Howard J. Stamp, will attend Massachusetts Institute of Technology, majoring in biochemistry.

Robert Parker, son of Dr. William Parker, will enroll at the University of California at Santa Barbara, majoring in electrical engineering.

Gail Blythe, daughter of Alfred Blythe, plans to major in pharmacy at the University of Southern California. Her father works at Nortronics Hawthorne.

Lou Cinda Holt, daughter of Frank Holt, will attend Rice Institute, majoring in philosophy. Her father is employed by Brown & Root-Northrop in Houston.

Photographs of Miss Blythe and Miss Holt were not available at press time, and will be used at a later date.

Nancy Ewing, daughter of Paul Ewing, will major in foreign languages at Occidental College.

Jim Kornell, son of Hal Kornell, will enroll at the University of California at Santa Barbara, with a tentative major in electrical engineering.

Gary Belford, son of Kenneth Belford, will enroll at Carnegie Mellon Institute in Pittsburgh, majoring in engineering.

NRC Gun Club Schedules Shoot At Silverado

A shoot at the Silverado Gun Club, east of Anaheim, has been set as the next activity of the NRC Gun Club, according to Fred Barber, commissioner.

The day-long shoot will begin at 9 a.m. this Saturday and last until about 5:30 p.m.

The firing of large and small bore rifles and pistols will be on a handicap basis. Trophies will be awarded to first and second place winners. Shooters are required to pay the $1.50 range fee, but all targets will be provided.

The shoot is open to all Northrop employees who are interested in shooting or in becoming a member of the NRC Gun Club. It is not necessary to be a member to participate in the shoot.

Further information may be obtained by contacting the club commissioner on Anaheim ext. 1194.

Bridge Play Scheduled for Fullerton NRC

A seven-section Nortronics Anaheim bridge tournament will begin tomorrow night at 7:30 at the NRC Clubhouse in Fullerton.

Play in the tourney, which is open to all Nortronics employees, families and friends, will be every Thursday night through July 25.

Entrance fee for each night is 50 cents, and players may enter any or all sections. Cash prizes ranging from approximately $4 to $20 will be awarded at the conclusion of the seven-week play.

The Personnel Activities office and Bridge Commissioner Don Brooks (ext. 1022) have entry forms and further information.

WEAPONS AND RELICS of World Wars I and II were displayed at the regular meeting of the NRC Gun Club last night at the clubhouse, in commemoration of D-Day, June 6, 1945. Members saw the M-1 carbine shown by Julian Bloom (left), senior draftsman, and the 1917 model Infield held by Fred Barber, senior designer. Both Mr. Bloom and Mr. Barber are in the Nortronics Mechanical Design department at Anaheim.

SECRETARIES FOR A DAY at Nortronics Anaheim recently were Linda Higginbotham and Linda Turner, students at Cerritos College. They observed the office procedures of executive secretaries Carole Dinnen and Ginger Lahn. Miss Dinnen (seated) shares a pleasant secretarial chore with Miss Turner (left), while Mrs. Lahn (right) and Mrs. Higginbotham look on. Both of the students have part-time jobs in addition to their classes at Cerritos. Each would like to become an executive secretary soon after graduation.

Cerritos Girls Participate in Secretary Day

Two secretarial students from Cerritos College in Norwalk have been guests of Nortronics Anaheim for the fifth annual Technical-Administrative Secretary Day in Business and Industry.

Linda Higginbotham and Linda Turner were assigned for the day to the offices of Frank Lynch, Nortronics vice president and Anaheim manager, and James Ricketts, deputy manager of Nortronics Anaheim.

Mrs. Higginbotham observed the work and office procedure of Ginger Lahn, executive secretary to Mr. Ricketts. Meanwhile, Miss Turner was counseled in secretarial practice by Carole Dinnen, executive secretary to Mr. Lynch.

JA Advisors, Students Attend Annual Banquet

The 14th annual Junior Achievement Future Unlimited banquet was attended by 2,400 achievers and advisors representing JA companies throughout Southern California. Three advisors and JA coordinator Harry Clark attended on behalf of Nortronics Hawthorne.

The event, at the Hollywood Palladium, featured product displays from every Southland JA company including the highway safety kit of HESKO.

The four HESKO achievers who attended were Nancy Becker, Margaret Casarez, Elaine Sidio and Loren Stacy. Miss Sidio was one of the winners in the Salesman-of-the-Year preliminary contest. Her personal sales for the year exceeded $200.

Junior Achievement is a national program of economic experience in which teenagers learn about the American system of free enterprise by actually organizing and operating small businesses of their own.

Each year, Northrop counsels achiever companies through its divisions. Management employees serve in advisory capacities in sales, production and management.

DOCTORATE STUDY

Guolo Accepted at USC

A performance evaluation specialist in the Administration and Controls organization at Anaheim has been accepted in the program leading to the degree of Doctor of Business Administration at the University of Southern California.

Mr. Guolo

Leo Guolo, a Northrop employee for 17 years, has already begun work on his doctorate, under Northrop's Educational Refund Plan, and expects to complete his thesis by the early 1970's. Mr. Guolo, whose hobbies are electronics and photography, took his bachelor's degree in engineering from USC in 1950 on the G.I. Bill, and his master's in business administration from California State College at Fullerton in 1965, also on the company Educational Refund Plan.

Mr. Guolo is currently developing an automated configuration management system on special assignment with the Program Planning group at Anaheim.

His wife, Millie, is also a long-term Northrop employee. She's been with the company 16 years, and is secretary to Doug Leavenworth, chief of Product Support.

May Tourney Draws Sixty To Jurupa Hills

Sixty Nortronics golfers turned out for four flights of play in the May tournament at Jurupa Hills Country Club in Riverside, as Roy Jackson took low gross honors with a 78. All other scores are net.

The first flight was won by Jim Randazzo, scoring a 64. Dick Wood and Virg Wilson came in second and third, respectively. Dick had a 68, Virg a 70. In the second flight, Russ Kirby was best with a 64, with Bill Robusch's 66 good for second. Dave Jenkins and Jim Horst tied for third with 67's.

The lowest net of the day was third flight winner Ray Flynn's 62. Bill Deneen came in second wtih a 67, and Bob Stastny, 69.

NORTRONICS-COUNSELED ACHIEVERS and their advisors attended the annual Future Unlimited banquet of Junior Achievement late last month at the Hollywood Palladium. Nortronics advisors are (seated from left), Harry Basford, management; George Downs, production; and Tony Musuraca, sales. Harry Clark (right), is the Nortronics Hawthorne JA coordinator. The achievers are (from left) Loren Stacy, Nancy Becker, Elaine Sidio and Margaret Casarez.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 12 | June 19, 1968

Long-Term Growth Seen By Mr. Jones

Steady, long-term growth, which always produces many new opportunities for advancement, has been predicted for Northrop Corporation by President Thomas V. Jones in a public address.

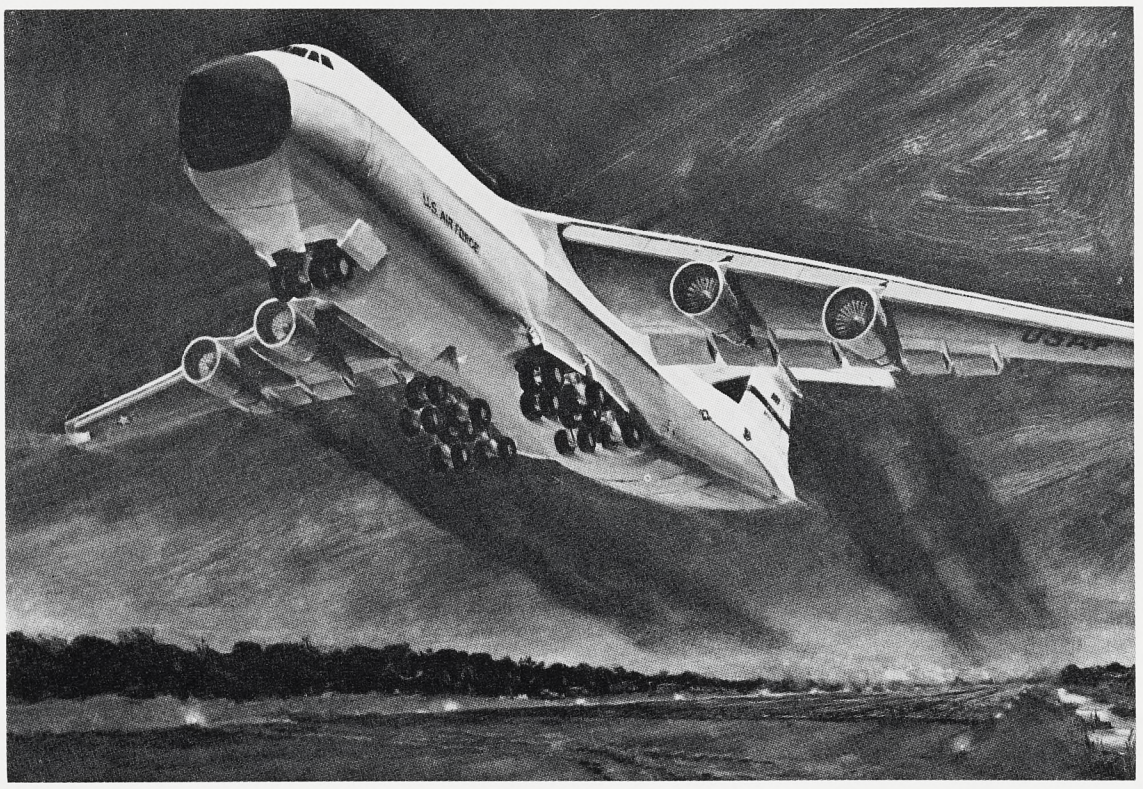
Speaking before the San Francisco Society of Security Analysts, Mr. Jones declared, "Our realistic operating plans — not hopes but actual plans — indicate we will reach a level of $700 million in sales in 1970 and with the help of a few acquisitions we would expect to approach a billion dollars in volume by 1972."

Last year Northrop sales amounted to about $471 million, and in this fiscal year which ends July 31, sales are expected to reach about $490 million, Mr. Jones said. Indicative of the sound and steady progress of the company, he has forecast profits this year will reach about $15 million, compared with $12.5 million for last year.

Mr. Jones said he expects the company's earnings to reach an even higher rate of increase in future years as volume builds up on major programs.

"The 747 Program," he said, "represents about 20 per cent of our total employment, but only about 2 per cent of billings

(See MR. JONES, page 6)



Artist's Drawing Shows the C-5 as It Will Look on Its Maiden Flight.

C-5 Galaxy First Flight Scheduled

The long-awaited first flight of Lockheed's giant U. S. Air Force C-5 Galaxy is scheduled for next Monday at Dobbins Air Force Base in Marietta, Georgia.

Although not scheduled for the first flight, the Nortronics-developed Inertial-Doppler Navigation

(See photo, page 6)

Equipment will be used as the C-5 navigation system. It is the same equipment that underwent in April its initial flight tests in a C-141 test aircraft. It was during these flights of five and one-half and six hours that the navigation system performed successfully within its rigid specifications.

According to Lloyd Balsam, Nortronics C-5 Program director, the first flight next week will concentrate on aerodynamics considerations.

The five-man Lockheed test flight team will "demonstrate compatibility of all aircraft systems and altitude and turn control responses, and generally monitor lift/drag predictions that came out of wind tunnel tests and computer programs."

Describing the plan for the initial flight, Lockheed - Georgia Vice President H. L. Poore said, "The Galaxy is expected to fly 30 to 50 minutes, gradually going up to 8,000 feet altitude and 185 knots (212 mph) airspeed. Based upon a weight of 425,000 pounds, the final approach to landing will be at an airspeed of 110 to 115 knots (126 to 132 mph)."

Preflight tests could include several days of taxiing — very slowly at first.

NEW CHANGES

Wages, Benefits Increased

New liberalized fringe benefits and wage and salary adjustments for all Nortronics personnel have been announced.

Frederick Stevens, vice president and Nortronics general manager, said the move is in line with the long-established Northrop policy to maintain wage and salary rates, fringe benefits and working conditions comparable with those in effect in other Southern California area industry.

Pay increases ranging from 8 to 15 cents an hour, dependent upon labor grades, the addition of 14 cents of the present 19-cent cost-of-living adjustment to base rates, and increases of the minimum and maximum of rate ranges became effective May 27 for eligible hourly rated personnel.

Salaried Personnel

Rate ranges for salaried personnel were also increased, and a salary increase fund, normally utilized in conjunction with regular review programs, was established.

Sick pay provisions for hourly and salaried nonexempt personnel have been increased and expanded to include all employees with more than one year of service. During the first year of this new program sick leave pay will be accrued for personnel with from one to 12 years of service. Personnel with over 12 years will receive the increased sick leave pay at the regular time. Beginning August 1, 1969, all hourly and salaried nonexempt personnel with at least one year of service will be eligible for three days of sick leave pay.

Insurance Improved

With no additional cost to employees, Group Insurance benefits have been increased to include hospital room and board allowances of $45 a day, up from $33; new maximum long-term disability benefits of $300 a week, up from $200; and coverage to include three types of complications arising from pregnancy.

A new option in both Hourly and Salaried Savings Plans permits participants to direct 100 per cent of their contributions to the Stock Fund for the first time.

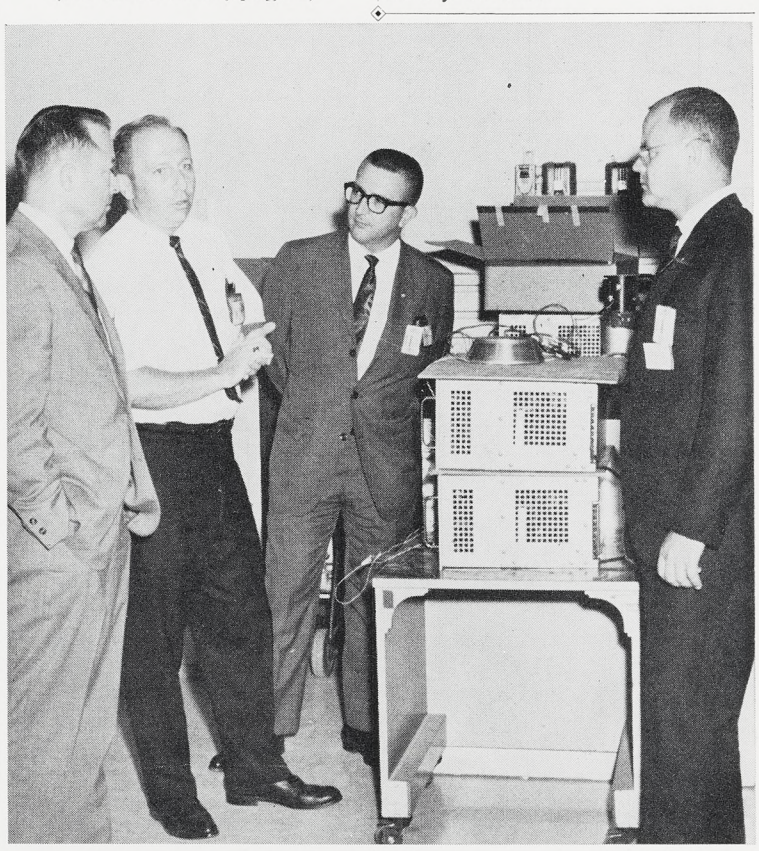
Army Seminar On Navigation Successful

A three-day Navigation Systems Seminar initiated by Nortronics Marketing and recently conducted by Nortronics for the U.S. Army, has been "successful beyond all expectations," according to Lloyd Jones, chief of Product Support.

Nortronics was host to a group of 20 key figures representing a cross section of U.S. Army facilities concerned with avionics.

The objective of the seminar, coordinated by Ed Rafnel, Nor-

(See SEMINAR, page 6)



NORTRONICS' ARMY SEMINAR this month in Hawthorne was acclaimed by avionics specialists across the country. Phil Fox (white shirt), lead engineer in the Environmental Laboratory, explains navigational equipment function to Lt. Colonel Al Denison (center), Combat Arms Group, Ft. Leavenworth, Kansas; and Lt. Colonel James Cook (right), U.S. Army assistant chief of staff for Forces Development, Washington, D.C. Art Hartman (left), a Norair engineering specialist in Tactical Avionics, participated in the three-day event.

Good Citizenship Program To Stimulate Voter Interest

Plans were completed this week for a campaign encouraging all Northrop Corporation personnel to take an active part in supporting their political parties and candidates in preparation for the general elections next November.

The Good Citizenship Program sponsored by Northrop in all divisions is part of a statewide movement which has enlisted more than 25 major industrial firms in the task of promoting greater political action.

Frank R. Smith, Corporate director of Industrial Relations, is chairman of the steering committee which is guiding Northrop's Good Citizenship Program.

Register Voters

He pointed out that major efforts will be devoted to sign up all unregistered voters so that they will be eligible to vote in November. In addition, all personnel will be encouraged to give financial support to their political parties, or specific candidates, and to offer volunteer help as the election approaches.

"Above all," Mr. Smith said, "we want to be sure that every eligible voter will exercise his voting franchise."

The Good Citizenship Program has received enthusiastic endorsement by Northrop's top management, including Thomas V. Jones, president and chairman of the board.

"Citizenship in the democratic United States is a state of being which most of us take for granted, because we have not been called upon personally to defend it," Mr. Jones commented. "The fact is, each of us must defend it.

Line of Defense

"The first line of defense is the ballot box where we periodically select the public officials who will operate the machinery of our government.

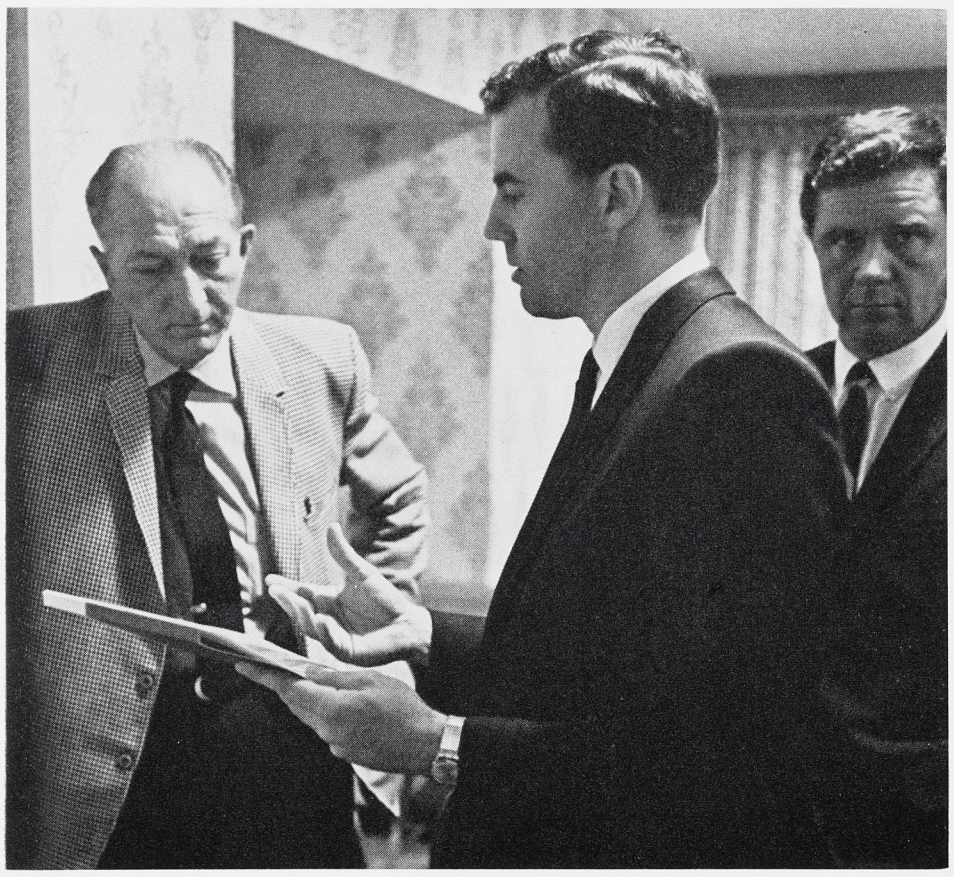
"If we choose good men and women, we are fortunate. If inept people get into office, we can blame only ourselves for failing to become involved in the elective process.

"That process includes voting," Mr. Jones added, "but it is more than voting. It requires knowledge of the candidates; participation in candidate selection; and, finally, direct assistance to the party and candidates of your choice in preparation for the November general election.

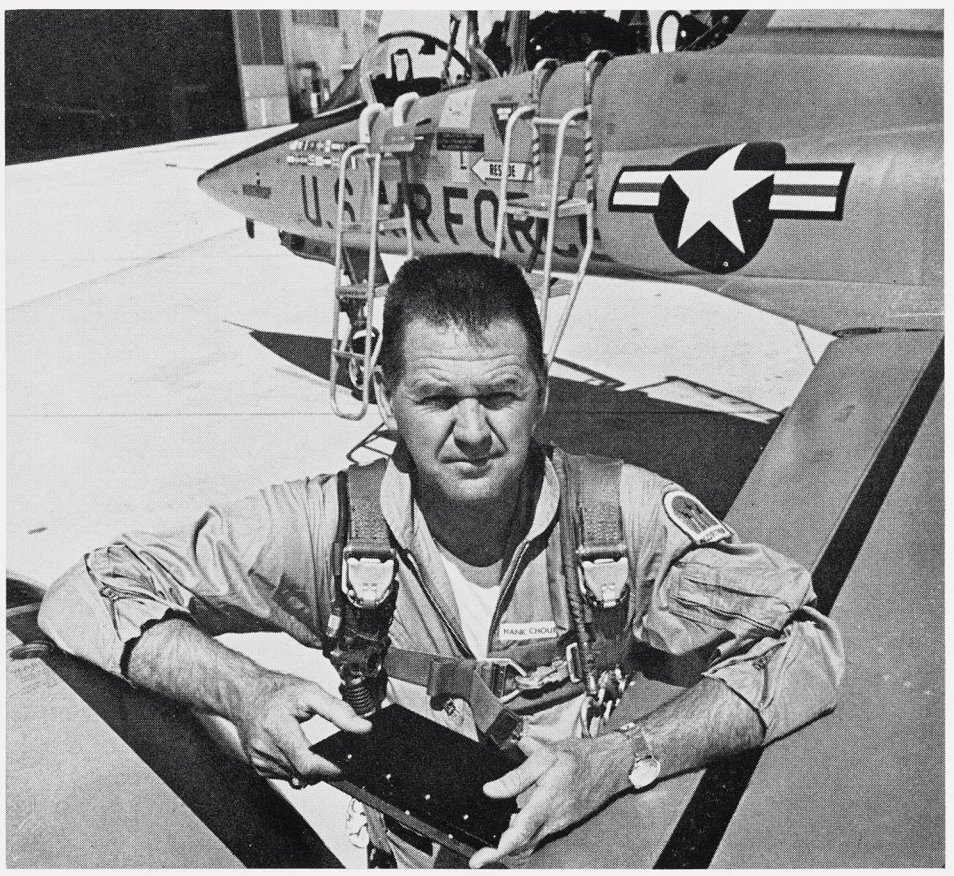
"For that reason, I urge everyone to participate in the Northrop Good Citizenship Program."

☆ ☆ ☆

"That government is the strongest of which every man feels himself a part."—Thomas Jefferson



NEWS BRIEFING—Ralph Dighton (left) of The Associated Press listens as Northrop's Dr. E. L. Harmon, an advanced materials scientist, explains the uses of graphite composite, a new material made from charred rayon threads. At right is H. E. Maninger, chief of Research and Technology Marketing for Northrop.



NEW MATERIAL IN USE—Northrop's chief test pilot, Hank Chouteau, holds an F-5 aircraft part made of the new graphite material. It is twice as strong as steel, yet 40 per cent lighter than aluminum. A duplicate of this part was installed on the Northrop F-5 tactical fighter in this photo.

Graphite Composite; Stronger Than Steel

Graphite composite, a new material made from charred rayon threads, could eventually replace metals now used in the manufacture of aircraft.

A leading edge wing part, designed by Northrop Norair Engineering and manufactured from the tough new material, was recently tested in flight for the first time on a Northrop F-5 at Edwards Air Force Base.

Newsmen were told of the use of the new substance in aircraft construction at a briefing at the Statler Hilton Hotel in Los Angeles. Dr. E. L. Harmon, advanced materials specialist, Northrop Norair Engineering Research and Development; Hal Maninger, chief, Research and Technology Marketing, Northrop Norair; J. N. Bohn, western regional manager, Chemical Propulsion Division, Hercules, Inc.; Robert B. Forsyth, applications manager, Advanced Materials department, Union Carbide Corporation; and Jack Williamson, vice president, U. S. Polymeric, Inc., were interviewed jointly by the attending press.

Rayon Thread

Beginning as rayon thread, the material is processed and wound into layers over a mandrel form block to the shape of a graphite composite airplane part which is twice as strong as steel and 40 per cent lighter than aluminum, yet lends itself to conventional machining techniques.

"We expect to find significant use of graphite composite on high performance aircraft within five years," said Dr. Harmon who has been heading the aircraft applications of the new material at Northrop, "and in 10 years we can see graphite composite replacing possibly as much as 30 per cent of structural aluminum and titanium applications on airplanes."

Airframe Use

Dr. Harmon and his study team foresee that eventually, entire airframes could be made of the new material. Aiding him in the study of the graphite material were Bernie Bowen, in Fabrication and Processing, and Joe Wada, in Design.

Working on other phases of graphite studies were Frank St. Germain, Materials Application; Bob Helm, Analysis; and Bob Johnson, Fabrication and Processing.

Assisting Mr. Maninger in Marketing has been Marketing Representative Floyd Damman.

Textile Technique

In a process more like textile production than metal forming techniques commonly associated with aircraft production, the charred rayon yarn is soaked in liquid plastic, coiled on bobbins, then wound on mandrels to form the desired aerodynamic shapes.

The first aircraft test sample, an eight-inch long section of a wing leading edge, now being test flown on the F-5, was designed and engineered at Northrop, where preliminary steps are under way to design a nine-foot-long wing flap of the new graphite composite, followed successively by other wing and fuselage components.

Combined Effort

The technical breakthrough to aerospace application of the new material was a combined effort of Northrop, Hercules, Inc., Union Carbide Corporation, U.S. Polymeric, Inc., and the U. S. Air Force Materials Laboratory at Wright-Patterson Air Force Base.

Union Carbide produces the yarn, called Thornel 50, by an intense heat process that converts an ordinary industrial rayon yarn to graphite yarn. U. S. Polymeric then applies a resin that slightly stiffens the yarn and makes it "tacky;" properties that facilitate the winding process and transfer strength throughout the material. Finally, Hercules winds the treated yarn on a mandrel, building up layers which, after curing under heat and pressure, became the tough, light aircraft part produced to Northrop's design requirements. The Air Force Materials Laboratory coated half the part with nickel to implement rain erosion studies.

Dr. Hicks Plans July 8 Speech In Montreal

The importance of modern management methods in aerospace research — despite their apparent paradoxical imposition of controls on what has traditionally been regarded as a creative "hands-off" endeavor — is stressed in a talk to be given by Dr. Donald A. Hicks at a joint meeting of United States and Canadian technical societies in Montreal July 8.

Dr. Hicks, vice president of Research and general manager of Northrop Corporate Laboratories, is scheduled to speak the first day of the meeting. The two-day event is sponsored jointly by the Canadian Aeronautics and Space Institute and the American Institute of Astronautics and Aeronautics.

Entitled "Management of a Modern Aerospace Research Program," Dr. Hicks' talk is part of the Industrial Management Section of the meeting. This session is headed by F. W. Lloyd, vice president and Norair general manager.

Torrance Luau Set For Hawaiian Tour

A Sunday afternoon Luau on July 14 at the Latitude 20 Restaurant, Torrance, will kick off planning for the Northrop Travel Clubs' annual yearend Hawaiian group tour.

Tickets, at $4 a person, are available through all Personnel Activities outlets.

The 1968 Hawaiian tour will be offered in two segments. An eight-day, three-island, tour will be available for $330. For those who have vacation time to add to Northrop's traditional yearend holiday, a 12-day, four-island, tour will be offered at $385.

Tickets to Play Available

Regular $6.30 tickets are available to Northrop employees for $3.50 for three performances of "In The Matter of J. Robert Oppenheimer" at the Mark Taper Forum, Los Angeles Music Center.

WITH NORAIR, NORTRONICS

Page To Head Joint Study

A six-month information systems study will be conducted jointly by three Northrop Corporation operating units under a contract awarded to Page Communications Engineers, Inc., Washington-based subsidiary of Northrop, by the Air Force Electronics Systems Division (AFESD), Hanscom Field, Bedford, Massachusetts.

The study is entitled "Tactical Position Location / Common Grid Analysis" and formerly was known as CASOFF, an acronym for Control and Surveillance of Friendly Forces.

The study will analyze and evaluate the effectiveness of techniques and methods for position finding, communications and identification for use with the Air Force Tactical Air Command Control System.

As part of the Page study, Northrop Norair will provide studies in systems cost effectiveness and operations analysis.

Northrop Nortronics, which has designed and produced navigation systems for such aircraft as the U. S. Air Force SR-71 and C-5, is providing studies of navigation and guidance systems.

According to the Air Force, the Tactical Position Location/Common Grid functions are performed today by ground radar and IFF equipment for high flying aircraft.

When the Airborne Warning and Control System comes into being, this coverage will be extended to include ground based units and low flying aircraft.

Implementation of a Tactical Position Location / Common Grid capability would provide significant improvement in accuracy and be capable of real-time communications with no mutual interference.

SIX YEARS OF SERVICE—M. E. (Red) Beyrodt, jr. (left), Northrop Corporation Community Relations representative, receives a certificate of appreciation from George F. Knoche, crusade chairman of the Los Angeles County Branch of the American Cancer Society. Mr. Beyrodt has been Northrop's representative to the society for six years, aiding in the securing of contributions.

TAKEOFF IN SPAIN — Initial Northrop F-5 tactical fighter to be produced in Spain lifts off the runway at Getafe with Darrel Cornell, Northrop test pilot, at the controls. Seventy aircraft, designated SF-5, are being produced for the Spanish Air Force under a special licensing agreement. It was one of three new versions of the F-5 making a debut in May.

FIRST FLIGHT in Spain of the SF-5A last month brought together this group of key CASA leaders with Northrop men. They are (from left) Senores Jose Ramon, Eugenia Aguirre, Don Jose Echague, Test Pilot Darrel Cornell, Senor R. Estirado, Northrop Vice President F. W. Lloyd, and Senor Jose Cervera.

Page Employee Describes Escape From Viet Cong

How does it feel to be an American in a Viet Cong-controlled city in Vietnam?

A Northrop man who has lived that experience is Delbert Weeks, a senior technician for Page Communications Engineers, a Northrop subsidiary.

Mr. Weeks, who joined Page in April 1967, is based at Page's Integrated Wideband Communications System headquarters in Hue—and for eight days last spring, he would have preferred being just about any place else in the world.

That was when the Viet Cong launched an attack which led to the control of nearly all of the city of Hue.

Mr. Weeks, who had lived in California before going to Page, sought refuge in a basement when the Viet Cong took command. For three days, he hid in the basement.

When he heard that the Viet Cong had been going through the neighborhood, searching for Americans, he decided he had to try to make his escape to the American forces.

He searched through the house and discovered a pair of black rayon trousers and a matching blouse; the traditional "black pajamas" of the Vietnamese.

"I tried them on," he later said, "and put on a conical straw hat, but I still just looked like an American in a funny costume. I looked about as Vietnamese as Roy Rogers."

His Vietnamese maid agreed to help him. She applied grease to his face, padded his ill-fitting costume and placed a small baby in his arms, thus making him an impromptu Vietnamese mother. The child was the baby of the maid's friend, and was the perfect thing to complete his disguise.

"We joined a group of refugees," Mr. Weeks said, "and started wandering through the streets.

"I didn't know how convincing my disguise would be, and there were North Vietnamese soldiers on every corner."

Finally, the maid, the baby and the American reached the refugee center; the ruins of a school. For four days, Mr. Weeks slept as much as possible, always keeping his hat pulled over his face.

"The North Vietnamese soldiers came through the camp from time to time," he said, "asking the refugees to point out any Americans. There were many refugees who knew I was an American, but none turned me in."

Once, Mr. Weeks himself was asked if he had seen any Americans, to which he replied in his best Vietnamese, "Toi khong biet" . . . "I don't know."

On the fifth day, Mr. Weeks awakened to the sound of gunfire, as the U.S. Marines were recapturing Hue, driving the Viet Cong back into the hills. The first Marines to enter the schoolyard were greeted by the strangest "Vietnamese mother" they had ever seen. "She" was wearing an eight-day beard and looked remarkably American.

Merit Scholarship Recipient Will Attend Pomona

Susan M. Hinds, 17, was awarded a four-year college scholarship under the National Merit Scholarship program.

Miss Hinds

Her father is Edwin J. Willcox, a member of Northrop Corporate Laboratories' Plans and Programs organization.

Miss Hinds, a senior at Camarillo High School, won a scholarship sponsored by the U.S. Army. Northrop Corporation has just completed the awarding of 10 scholarships to Northrop sons and daughters under this program.

Miss Hinds is secretary and a life member of the California Scholarship Federation. She plans to enroll at Pomona College.

RETIREMENT GIFTS—Muriel Jones smiles as she receives a gift and a plaque (in foreground) from fellow workers at the Northrop Corporate office. She was secretary to George Gore (left), Northrop vice president, general counsel and secretary, for 18 years, and was with the company for 21 years.

Still, Ramsey Named to Key P. R. Positions

Henry Still, manager of Public Relations at Northrop Ventura for five years, has been appointed Corporate chief of Public Information and has been assigned to the Corporate offices.

Succeeding Mr. Still at Ventura is Charles Ramsey, who has been a member of the Public Relations staff for three and one-half years. Before joining Northrop, Mr. Ramsey was employed by the Washington (D.C.) Star as a news editor and by the Fluor Corporation as a public relations representative. He edited the Northrop News before being transferred to Corporate headquarters in 1966.

Prior to coming to Northrop in 1963, Mr. Still was a newspaper reporter and editor for 20 years, including a four-year assignment as city editor of the Rocky Mountain News in Denver. Mr. Still came to Northrop from the Martin Marietta Corporation, where he was on that firm's public relations staff in Baltimore and New York. He is the author of four books on world problems, the latest of which will be published next fall by Hawthorn Books, Inc.

GAIL BLYTHE, with her parents, Mr. and Mrs. A. E. Blythe, displays her National Merit Scholarship certificate, sponsored by Northrop Corporation. Her father, supervisor of Personnel Administration at Nortronics Hawthorne, has been with the company for seven years. Miss Blythe graduated this month from Loara High School in Anaheim, and will attend the University of Southern California.

Artist Robert Mack's Canvases Tell Stories

Artist Robert Mack puts oil on canvas in a way that tells a story. In only a year of realistic figure painting, he has won awards in 10 art shows entered. Often, he paints portraits of his own children. Always he paints youth.

He is not afraid of hands or other detailed features. This, coupled with his innate ability and sensitivity for expression, has brought him to a point where, today, important art dealers are noticing and appreciating his work.

One Beverly Hills gallery already has sold eight of Bob's earlier canvases. And, just last week, an agreement was made for Bob and his work to be represented by the Challis Galleries in Laguna Beach.

"I'd like to build my own collection to the point where I could have a show soon," Bob said. Even now, his work is on display at Nortronics Anaheim in the first floor corridor of Y-3, and will be until July 1. In addition, Bob must find time to fulfill a commitment for five individually commissioned paintings.

If the motivation is there, Bob can complete a painting — working with brushes, a knife and his fingers — in three to four weeks.

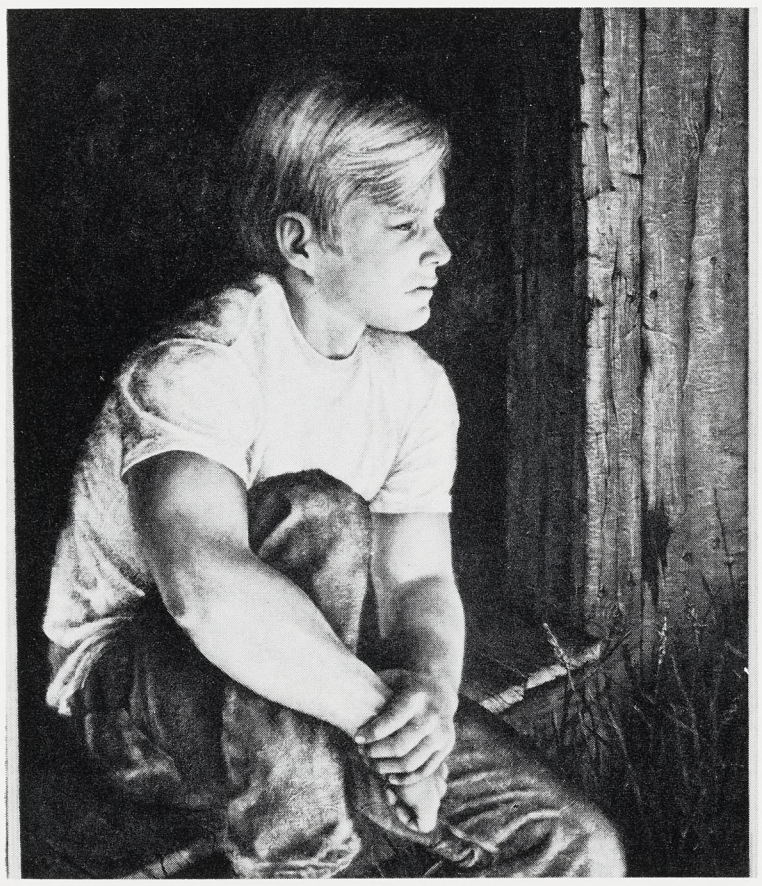
Since he first switched from water colors to oils last June, Bob has been consumed by his work. He has never been without a canvas on the easel. He works in a corner of his bedroom.

But Bob Mack, a Graphics artist at Anaheim, hasn't always been an artist. Earlier, he worked on an automobile assembly line with no hope for self-expression. Three semesters of advertising art at Los Angeles Art Center cured that. Bob has been in Nortronics Graphic Arts since 1965.

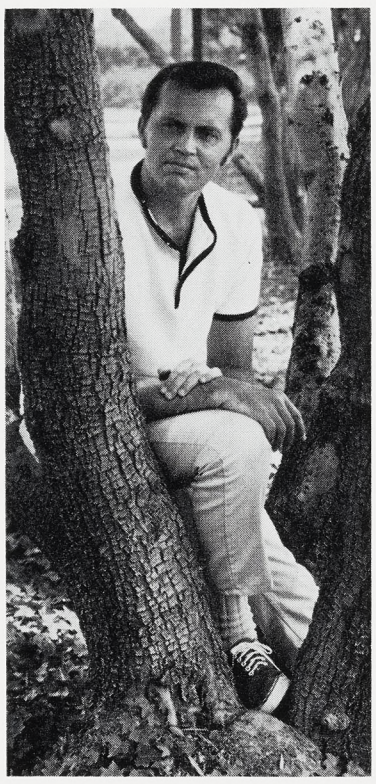
His painting titled "Robin" is of Bob's 9-year-old daughter. It won first place at a Roland Heights show in April, and second place at Pico Rivera in February. His work titled "Joe" won the "most popular painting of the show" award in April at Downey.

Bob, his wife, JoAnne, and Robin, Eric, Lisa and Steven, their four children, live in Covina.

'At The Waiting Gate'



'Joe'



ROBERT MACK: "Painting, to me, is like reading a good book. It is an enjoyable experience throughout, and when I'm finished, I'm sorry it has ended."

'Robin'

A QUARTER-CENTURY—John Oliver (left) smiles while talking with Northrop President Thomas V. Jones, after Mr. Jones presented him his 25-year pin. Mr. Oliver is Northrop's administrator of Product Licensing.

IT'S A FACT AT NORTHROP

U.S. Underseas—A Leader in its Field

Northrop Corporation's involvement in virtually the full spectrum of global communications includes the old but ever-growing technology of submarine cable laying and manufacture.

U.S. Underseas Cable Corporation, with headquarters in Washington, D.C., is a Northrop affiliate and one of the world's leaders in communications cable work.

One of USUCC's prime facilities is the 12,000-ton *Neptun*, commissioned in 1962 as the largest-capacity cable ship ever built.

The *Neptun's* first job was laying the 1,700-mile cable from Iceland to Canada, and the ship has the capacity to lay a telephone cable from Europe to the United States in a single operation—a feat never before possible with one ship.

Some of the Underseas Cable's outstanding technical achievements include:

First trans-Atlantic telephone cable (Scotland to Newfoundland).

California - Hawaii telephone cable.

A cable serving communications and telemetry along the chain of islands down the Atlantic Missile Range.

Completion in record time of a 740-mile multi-channel telephone cable from South Vietnam to the Philippines, a vital link in the trans-Pacific military communications network.

At the present time, a telephone call theoretically could be made by cable and land facilities from Washington, D.C. to the east coast of Siberia, but not across the Sea of Japan.

U. S. Underseas Cable now is serving as prime contractor to lay a 450-mile cable linking Russia and Japan.

When that project is complete (scheduled for May 1969) telephone facilities by cable will completely circle the globe.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Triumph, 1963 TR3 roadster, tonneau cover, top, new 4-ply nylon tires, $1,150. 213-831-6560. A

Dart, 1964 GT, 4-spd. floor shift, r/h, $1,100. 213-372-5367. A

Dodge, 1963 Dart, r/h, a/c, $800. 213-422-8093.

Pickup Truck, 1965 Ford V-8, ½-ton, hvy. duty tires & o/load springs, $1,250. 213-376-5553. A

Corvette, 1965 Sting Ray, fuel injection, mag wheels, extras, new tires, $3,100. 213-374-2756. A

Chevrolet, 1964 Impala, 2-dr. h/top, p/s, p/b, r/h, new w/s/w tires, $1,395. 213-324-8747. A

Volkswagen, 1963, 32,000 miles, $950. 213-375-3339. A

T-Bird, 1963, full power, air, $1,195. 213-675-7740. A

Chevelle, 1967 Super Sport, 396 cu. in., 350 h.p., 17,000 miles, mag whls., $2,600. 213-838-0532. A

Ford, 1932 3-window cpe., new reblt. Olds eng., hydromatic trans., $450. 213-892-7972.

Pontiac, 1965 Le Mans, h/top, 326 eng., p/s, AM-FM radio, 5 new tires, auto. trans., $1,875. 213-329-1202. A

Chevelle, 1965 Malibu S.S., 327, 4-spd., $1,700. 213-292-6332. A

Pickup Truck, 1965 Chevrolet, 6-cyl., 3-spd. trans., long bed, $175. 213-542-3626. A

Ford, 1966 Galaxy, 390-4V, full power, disc brakes, stereo tape, $2,250. 213-675-3050. A

Chevrolet, 1967 El Camino, 14,000 miles, 327 cu. in., 275 h.p., p/s, auto. trans., V-8, E-Z lift hitch attach., $2,250. 213-672-8468.

Triumph, 1965 TR-4, r/h, wire whls., tonneau, $1,750. 213-676-0485. A

Station Wagon, 1961 Chevrolet, stick, 6-cyl., $475. 213-379-2326. A

Volkswagen, 1964, 2-dr., $1,050. 213-644-3024. A

Firebird 400, 1967, 4-spd., 411-positraction, Isky cam, stereo tape, w/4 speakers, mag. whls., disc brakes, $3,200. 213-695-2678. A

Volkswagen, 1956, almost new tires, recently o/hauled trans., $350. 213-676-1018.

Cad-Allard, 1953 K-3 roadster, all orig. road equip., $1,200. 213-398-5019. A

Plymouth, 1964 Valiant 200, 2-dr. sedan, 6-cyl., auto. trans., r/h, $975. 213-347-5940.

Truck, 1959 Ford, ½-ton, 8′ bed, o/drive, 6-cyl., $595. 213-378-2193. A

Oldsmobile, 1956 2-dr. h/top, $500. 213-373-1618. A

Dodge, 1964 Dart, 4-spd., 33,000 miles, $995. 213-831-6878. A

Triumph, 1966 TR6, 650 cc, many extras, $850. 213-433-5543. A

Corvette, 1967 fastback, posit. rearend, r/h, 327 w/300 h.p. eng., $3,600. 213-679-7840.

Volkswagen, 1961 2-dr. sedan, new tires, $675. 213-378-6675. A

Camper, 1965 Volkswagen, awning w/sides, stove, ice box, water tank, louvered windows, $1,895. 714-962-1805. A

Cadillac, 1961 Fleetwood, p/b, p/s, p/w, fact. air, $795. 213-353-9337. A

Buick, 1965 Skylark Gran Sport, p/s, p/b, fact. air, 4-spd. stick, $1,495. 213-423-5844.

Pickup Truck, 1966 Ford, ¾-ton, less than 20,000 miles, big 6, 4-spd., $1,625. 213-864-0614. A

Sprite, 1960, H-production ext., 1100 head, cam, $600. 213-635-3824. A

Falcon, 1963 Futura, auto. trans., r/h, 2-dr. h/top, 6-cyl., $550. 213-375-9397, 213-375-2091. A

Pontiac, 1966, p/s, p/b, 421, $2,195. 213-697-3769. A

Shelby GT 500, 1967, 428 cu. in. Le Mans eng., auto., p/b, p/s, $3,600. 213-675-1365. A

Pontiac, 1959, new front end, $350. 213-433-8176. A

Volkswagen, 1965, low miles, good tires, $1,100. 213-293-5827. A

Corvette, 1963 fastback, AM-FM radio, 327 hi-perfcrmance eng., 4-spd. Hurst, $2,250. 213-564-8841. A

Chevrolet, 1964 Bel Air 8, 4-dr., r/h, auto. trans., 40,000 miles, $975. 213-324-8979. A

Station Wagon, 1965 Volvo, 4-spd., r/h, $1,850. 213-374-8358. A

Chrysler, 1960, p/s, p/b, p/seats, $150. 213-672-4486. A

Pontiac, 1963 LeMans, 326 V-8 eng., auto. trans., r/h, p/s, near new tires, $875. 213-679-0918. A

Station Wagon, 1965 Pontiac Bonneville, complete power, a/c, many extras, $2,300. 213-361-1097. A

Volkswagen, 1963, r/h, needs muffler, $872.50. 714-524-0889. A

Automobiles For Sale

Cadillac, 1963 Fleetwood 60 Special, full power, air, fact. cast alum. wire whls. w/ 30,000 mile guarantee on tires, $1,995. 213-541-1321. A

Mustang, 1967, V-8, auto. trans., p/s, r/h, $2,650. 213-676-5846. A

Station Wagon, 1961 Oldsmobile Super 88, 9-pass., r/h, $650. 213-672-5798. A

Volkswagen, 1960, $550. 213-478-6959. A

Dodge, 1964 Custom 880, 4-dr., 383 V-8 eng., fact. air, auto. trans., AM-FM radio, extras, $895. 213-673-4698. A

Rambler, 1959, 4-dr. sedan, 6-cyl., stick shift, $275. 213-644-2885. A

Household Items For Sale

Floor Lamp, 3-way, turned Salem maple, $10. 213-675-5522. B

Crib, blonde, $12.50. 213-679-8550. B

Bunk Beds, metal frames, wood trim, mattresses & ladder, $25. 213-376-4831. B

Bedroom Set, $15. 213-323-6637. B

Converti-Bed, $25. 213-675-1860. B

Wardrobe, child's, white, pink handles, $30. 213-326-1876. B

Breakfast Nook, L-shape, gray, center pedestal table & elec. outlet, $50. 213-692-6336.

Rug, 9x9, brown & white tweed, w/pad, $35. 213-644-3116. B

Refrigerator, 15 cu. ft., Frigidaire, 90 lb. freezer compartment, $75. 213-377-5322. B

Rug, 8′, round, wool multicolor reversible, $45. 213-323-4855. B

Washer, auto., deluxe Kenmore, 2-spd., recently o/hauled, $50. 213-363-6617. B

Range, Wedgewood, gas, w/rotisserie, $50. 213-377-7317. B

Range, Frigidaire, elec., 2 yrs. old, $80. 213-862-6193. B

Washer & Dryer, Kenmore, both 1 cycle, white enamel, $50 ea. or $75 both. 213-398-8613. B

Dinette Table & 4 chairs, $15. 213-375-8804.

Range, Kenmore, 4-burner w/griddle, lge. oven, broiler, $40. 213-836-1142. B

Washer-Dryer combination, Norge, needs minor repair, $10. 213-374-2915. B

Commodes, solid birch, 1 octagon, 1 rectangular, 6 mos. old, $40 ea. 714-875-8495. B

Chest, maple, needs refinishing, 5-dwr., $25. 213-479-6127. B

Washing Machine, Kenmore, 8-cycle, $100. 213-675-8068. B

China, Royal M, fragrance pattern, 85 pcs., $35. 213-679-6982. B

Tables, Salem maple, step end, 2, coffee & drum table, $10 ea. or $35. 213-675-8813. B

Refrigerator, Norge, 19 cu. ft., coppertone, 200 lb. freezer capacity, $195. 213-756-4702. B

Sofa, 9′, 2 matching chairs, Mediterranean, olive & white floral, $329. 213-676-2141. B

Bed, dble., mattress, springs & frame, other household items, $50. 213-677-3471. B

Coffee Table, round, w/2 end tables, Italian modern, other items, $85. 213-673-1253. B

Range, 36″ O'Keefe & Merritt Deluxe, $50. 213-375-5097. B

Miscellaneous For Sale

Motorcycle Trailer, carries 3 motorcycles, $125. 714-638-4014. C

Cemetery Lot, dble. interment, Inglewood Rest Haven, $700. 714-521-5258. C

Fan, 20″ roll-about, chrome stand, alum. blade, $15. 213-320-3529. C

Motorcycle, 1966 B.S.A., $850. 213-324-2942.

Wiglet, chestnut brown, human import hair, worn twice, $30. 213-320-6685. C

Water Ski Blanks, cut, shaped, formed & varnished, various styles, $5. ea. 213-630-4188. C

Micrometer, Starret and Craftsman, 1-2, $12. 805-498-3549. C

Jig Saw, 18″ throat, on rollaway stand, ¼ h.p. motor, $35. 714-827-9356. C

Lathe, Craftsman Atlas, 36″, metal turning w/10″ swing, extras, $750. 213-865-5084. C

Carry-All Rack for 1965 Chevrolet, ½-ton pickup truck, custom blt., tubular steel, $50. 213-370-7092. C

Stew Pot, elec., w/attachment thermostat, $5. 213-644-3084. C

Lawn Edger, Silex, elec., extra blades, $5. 213-423-4837. C

Home, 3-bdrm., transferable 6% loan, covered patio, cpts., remodeled kitchen, near schools & shopping, $24,300. 213-374-2837.

Bicycle, girls 24″, $15. 213-532-7717. C

Poodle, toy, black female, papers, 9 mos. old, trained, 7″ high, $65. 213-671-8105. C

Ski Boat, 14′ Tempest 150, all glass, 75 h.p. Evinrude, Wallstrong trailer, 6-gal. gas tanks, $1,500. 213-545-2463. C

Instrument Rating Course, Jeppesen, latest edition, $30. 714-847-2648. C

Boat, 1963 Glasspar, 16′ Avalon, Mercury 850, American tilt trailer, all access., $1,600. 213-521-1700. C

TV & radio comb., Emerson, 8″ portable, $50. 213-379-3134. C

Guitar, Fender Mustang, elec., $100. 213-679-4245. C

Mower, one-hand, 20″, $5. 213-675-9530. C

Motorcycle, Honda 90, 126 miles, $320. 213-327-1949. C

Wig, European human hair, shoulder length, strawberry blonde, inc. stand, $100. 213-675-5963. C

Miscellaneous For Sale

Ski Boat, 16′ inboard, glass o/wood, reblt. flathead eng., 15′ wheel trailer, $500. 213-320-3014. C

Lot, 25′x100′, Big Bear City, level, trees, utilities avail., $1,450. 213-598-3072. C

Sailboat, 11′ centerboard, extras, $365. 213-325-4094. C

House, 3-bdrm., family rm., fireplace, bltins, cpts., dps., walk to Northrop, $23,500. 213-676-6463. C

Ski Boat, 14′, 40 h.p. Mercury motor & trailer, all ski equipment, $650. 213-673-2559. C

Acreage, 20 acres, north of Willow Springs, $500 dn., $45 mo., $5,000. 805-947-6900. C

Camera, Agfa 35mm f/2.8, auto. light meter, $25. 213-672-7424. C

Power Mower, radial, grass catcher, 4-cycle Briggs & Stratton eng., $45. 213-325-8478. C

Record Player, stereo & AM-FM radio console, 6 speakers, oiled walnut cabinet, $140. 213-541-1517. C

Partnership in Cal-25 sloop, $2,500. 213-670-3758. C

Tent Trailer, Tartan, sleeps 6, $300. 213-757-1948. C

Lot, ½-acre, Apple Valley, electricity, water & gas, $150 dn., $25 mo., $1,995. 213-328-7048. C

Porch Railing, ornamental w/center post, 15′, $35. 213-293-5993. C

Surfboard, 10′ Rick, 3 stick, $87. 213-372-5183. C

Camera, Nikon 35mm S.L. reflex, 5 lenses & 3 cases, $700. 805-942-5306. C

Ski Boat, 12′6″, fiberglass o/wood, 40 h.p. Mercury eng., Heco trailer, $400. 714-828-8439. C

Wedding Ring, matched set, white & yellow gold, 3 diamonds in each ring, $100. 213-323-2643. C

Home, 3-bdrm., 1¾ baths, bltins, cpts., dble. gar., fenced yd., assume 5¼% loan, $22,900. 213-865-7770. C

Sailboat, 28′ sloop, sleeps 4, inbd. eng., main, jib, genoa & spinnaker, $5,000. 213-378-4352. C

Window Sash, wood & frame, single light 3′6″ w. x 2′ h., hinged at top, $5 ea. 213-375-5838. C

House, 5-bdrm., 3 baths, tri-level, lge. fam. rm. w/wet bar, living rm. w/fireplace, elec. kitchen, d/washer, $48,000. 213-325-8913. C

Slip Lot, Salton Sea, roads & utilities in, south side of sea in Riviera Keys, near yacht club, $7,100. 714-535-1694. C

Honda, 1966 Superhawk, 305 cc, many extras, $450. 213-372-0313. C

Rack, for bench press, & 300 lbs. of weights, dumbells, $30. 213-377-2160. C

Wig, lt. brown, European human hair, shoulder length, silk cap, stand & case, $100. 213-670-6123. C

House, 3-bdrm. & den, covered patio, 1¾ bath, complete bltin kitchen, indoor bar-b-que grill, many other extras, $27,500. 213-675-6430. C

Home, 4-bdrm., 2 full baths, lge. fenced yard, 2-car gar., repainted inside & out, near Garden Grove Fwy., low down, $21,995. 213-676-4203, 213-581-5208, 714-839-1053. C

Surfboard, Weber Performer, 9′ 10″, $120. 213-831-9402. C

Model Railroad Equipment, misc. cars, track bed, switch sets, H.O. gauge, $7. 213-375-4574. C

Home, 3-bdrm., 2 baths, view, lge. fam. rm. w/fireplace, beam ceilings, wood paneled den, bltins, patio, Rolling Hills Ests., $41,900. 213-373-3142. C

Lawnmower, Sears Craftsman, rotary, 20″, 3 h.p., spring start, $35. 213-375-7038. C

Miscellaneous For Sale

Lot, R-2, Big Bear, approx. 75′ x 130′, near golf course & ski area, will finance, 10% dn., $4,900. 213-377-3888. C

TV, color, portable, G.E., in unopened carton, $199. 213-625-8211. C

House, 4-bdrm., block wall, enc. patio, bltin barbecue, elec. kitchen, cpts., fireplace, sprinklers, $28,000. 213-320-6975. C

Poodles, mini-toy, AKC registered, shots, 2½ mos. old, $45. 213-375-5885. C

Acreage, 5 acres in Antelope Valley near Willow Springs, $35 dn., $35 mo. inc. 6% interest, $3,500. 213-378-1026. C

Pool Table, 4′x8′, $85. 213-371-8929. C

Lawnmower, rotary 2½ h.p., $25. Box 1201.

Binoculars, Leitz Trinovid, 10 x 40, w/hard leather case, $195. 213-379-3487. C

Beer Bar, Tap King, spare 7½ gal. keg & cleaning kit, $125. 213-675-8617. C

Acreage, Lake Los Angeles, 1 acre, $995 & take over $40 mo. pymts., $4,700. 805-526-7767. C

TV, 21″ table model, b&w, $50. 213-326-6195. C

Motorcycle, 1966 Yamaha YDS-3, 250 cc, $400. 213-323-7544. C

Honda, 1965 CB-177, 305 cc, $350. 213-547-4689. C

Camera, Mamiya C-3, 105 mm lens, case & shade, $90. 213-596-9819. C

Home, 3-bdrm., 2 baths, den, h/wood floors, 2-car gar., patio, cinder block fence, stucco, 10% down to assume existing loan, $21,995. 213-671-8401. C

Boat-Trailer, 4-whl., tubular steel, $180. 213-831-9545. C

Bicycle, girl's 24″, $10. 213-328-3306. C

Home, 4-bdrm., 2 baths, family rm., covered patio, water softener, Dominguez Hills, 20 min. from Hawthorne, vets no dn., $26,000. 213-639-6499. C

Photo Enlarger Eclipse w/tanks, trays, easels, $35. 213-789-5791. C

Heads, for 260 Ford, rebuilt, $30. 213-679-9648. C

Tires, 5 tubeless, 7-17.5, 6-ply, mounted on 6 lug drop center rims, $30. 213-675-0521. C

Cabin Cruiser, 17′, 110 h.p. Mercury, $1,900. 213-375-0351. C

Camera, Minolta SRT-101 single lens reflex, w/behind lens meter, microprism focusing, interchangeable f/1.7 lens, case, lens hood, used 4 times, $165. 213-376-4473. C

Lens, wide angle Rokkor Minolta, 35mm, f/2.8, auto. diaphragm, meter-coupled to SRT-101, case, used once, $70. 213-477-7741.

Ski Kite, Banta std., complete w/slalom conversion, $150. 213-343-8665. C

Wanted to Buy

Carrier, for surfboard, Aloha, clamp type. 213-675-6660. D

Trailer, tandem for 23′ cruiser. 213-670-7183.

Jeep, 4-wheel drive. 213-370-7749. D

Bicycle, ladies 26″, reasonable. 213-677-9333. D

Power Mower, reel-type. 213-377-8867. D

Rear End & stick trans. for Chevrolet, 1955 to 1960. 213-329-4200. D

Flute, C. 213-651-0445. D

Guitar Amplifier, bass. 213-329-9042. D

For Trade

Dryer, elec., 220 volts, lge. capacity, trade for gas dryer, Kenmore. 213-759-5053. E

Free (To Be Given Away)

Pigeons, mated or singles. 213-325-3452. F

Palm Tree, small. 213-370-6400. F

Dog, female spayed beagle & terrier mix, 1 yr. old, has all shots. 213-325-2292. F

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Crenshaw Blvd. & Lomita Blvd., Lomita. T. Thompson, Norair ext. 1963, 213-534-3602.

Gaffey & 7th, San Pedro. Alternate weeks. Maurice David, Nort. Haw. ext. 830, 213-831-9600.

8 a.m. — 4:45 p.m.

Tampa Ave. & Victory Blvd., Reseda. Can meet at Ventura Fwy. William Buffington, Norair ext. 2498, 213-344-8896.

Rides Offered

8 a.m. — 4:45 p.m.

Tampa Ave. & Victory Blvd., Reseda. Can meet at Ventura Fwy. William Buffington, Norair ext. 2498, 213-344-8896.

Rentals Offered

Trailer, on beach, 18 miles below Ensenada, Mexico, sleeps 5, $45. wk. 213-255-6625. G

Apt, 1-bdrm., bltins, $80 mo. 213-329-8063. G

Cottage, Ocean Beach, San Diego, near Mission Bay Park, $65 wk. 714-826-2007. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Apt, small, on Catalina Island, bicycles to use, walk to beach, 2 adults, $65 wk.; 2 adults & 2 children, $80 wk. 213-323-0526.

Apt, 2-bdrm., pool & patio, closed gar., near El Camino, adults, furn., $170; unfurn. $140. 213-329-5986. G

Bachelor Apt, furn., bltins, closed gar., $100. 213-328-9199. G

House, 2-bdrm., over gar., gar. not inc., $110. 213-328-2932. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Cabin, A-Frame, furn., sleeps 5, 40 miles west of Colorado Springs, close to stream & lakes, $70 wk. 213-894-1937. G

Cabin, Lake Arrowhead, modern, 200 feet from lake, north shore, $100 wk. 213-375-2255. G

Bachelor Apt, utilities inc., close to Northrop, $75 mo. 213-679-8394. G

Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $50-$90 wk. 213-754-5288. G

Rentals Wanted

House, 2-bdrm., unfurn. except stove & refrigerator, in Kirkwood area of Laurel Canyon, up to $200 mo. 213-322-2332. H

Child Care

Child Care offered, my home, ages 3 to 6 yrs., $15. wk. 213-325-7351. I

Personals

General cleaning lady needed immediately, one day a week, some ironing. 213-532-7663.

I wish to express my sincere thanks for the kind thoughts & deeds extended to me at the time of the death of my mother, Mrs. Emma Elizabeth Patta. GERALDINE O'MALLEY.

For Sale or Trade

Motorcycle, Honda 150, $350 or trade for pickup truck. 213-325-3724. M

Station Wagon, 1960 Ford, 6-cyl., stick shift, $200 or trade for boat or motorcycle. 213-325-7605. M

Surfboard, 10′ Jacobs $60 or trade for board of less value as part payment. 213-373-2891. M

Buick, 1966, $1,650 or trade for pickup. 714-774-0950. M

Camper-Van, 1967 Chevrolet, V-8, std. trans., fact. installed camper unit, $2,900 or trade for car. 213-672-4231. M

Mustang, 1965, 271 hi-performance, 4-spd., rally pack, GT kit, 34,000 mi., $1,880 or trade for station wagon or sedan, compact preferred. 213-833-4198. M

GOOD CITIZENSHIP COMMITTEE—Members of the California Good Citizenship Committee meet to plan the participation of industry in the program. Seated (from left) are Charles Soderstrom, chairman of the Los Angeles County Republican Central Committee; Roy Marquardt, chairman; and Norbert A. Schlei, Democratic official. Standing (from left) are Frank Smith, Northrop director of Industrial Relations; Douglas Wood; Albert C. Meyer; K. Warren Snider; and Edmund G. Ducommun. *See story on page 1.*

Air Force Men Attend C-5 Training Sessions

Three training courses are being conducted by the Nortronics Navigation department.

A two-week C-5 Inertial Doppler Navigation Equipment (IDNE) ground support course for Lockheed personnel began Monday and will continue until June 28. George McGilligan, Nortronics service engineer, is the instructor. This course is designed to provide Lockheed personnel with the knowledge and skills necessary to conduct Type One factory special training.

A three-week course in progress at Hawthorne is the Holloman C-5 IDNE Training Program. Rick Crilly, Nortronics Customer Training specialist, is instructing a group of officers and civilians from Holloman AFB, Wright-Patterson AFB, and Edwards AFB. The objective of the course is to provide the knowledge and skill necessary to support the system in the area of maintenance and performance analysis during the C-5 flight test program at Holloman beginning in July.

Roland Freeman, Nortronics Customer Training specialist, has been in Nashua, New Hampshire, since June 3 conducting a training program for Sanders Associates, Inc. engineers and Air Force personnel in the programming and maintenance of the NDC-1060 Nortronics computer and support equipment.

Radio Club Members Plan Weekend Test

Members of the NRC Radio Club at Anaheim will join forces with members of the Anaheim Amateur Radio Association to participate in the Amateur Radio Relay League-sponsored annual nationwide test for emergency powered radio stations.

The event, called Field Day, combines emergency preparedness with an enjoyable and unique contest.

Activities begin at noon this Saturday and run continuously until 3 p.m. Sunday. The test requirements dictate that communications be conducted from an unprepared site and be completely powered by emergency power.

The Anaheim club station will be on the Irvine Ranch property on the west side of Santiago Canyon Road, north of Chapman Boulevard. The station will be operating six separate transmitters for more than 24 hours.

SEMINAR

(Continued from page 1)

tronics senior applications engineer, was to teach all aspects of present day navigation state-of-the-art.

Frank Merlino, Nortronics Customer Training specialist, was closely involved with the project's conception and development.

MR. JONES

(Continued from page 1)

or sales for the current fiscal year. We believe our 747 sales will be about $12.5 million this year, $85 million in 1969 and more than $190 million by 1970."

Mr. Jones predicted a growing market for Northrop communications systems, and forecasted rapid growth in sales in this field for the next five years. Communications and electronics, he said, are running close to $200 million a year in current volume.

President Jones said that production on the F-5 Freedom Fighter will continue through 1970 on the basis of existing orders and through 1973 as a result of expected orders.

BIG NICKEL WINNERS from the Navigation department in Hawthorne have made cost reduction suggestions on the C-5 Program. In the words of John McCarthy, director of Material at Lockheed-Georgia, "a Big Nickel is a nickel that by ingenuity, care, thoughtfulness, and the application of professional ability, is made to do the work of a dollar." Dorothy Rogers is the only Big Nickel winner who was unavailable when photographs were taken.

LAUNCHES ITSELF

Space Engineer Explains Orbital Shuttle

The recent publication of an article by a Nortronics space systems engineer has focused attention on an economical type of space vehicle termed orbital shuttle which is capable of launching itself and one or more other spacecraft from a larger launch vehicle once the larger launch vehicle is in orbit.

In so doing, it allows a single launch vehicle to accomplish the missions of several spacecraft with different orbit requirements.

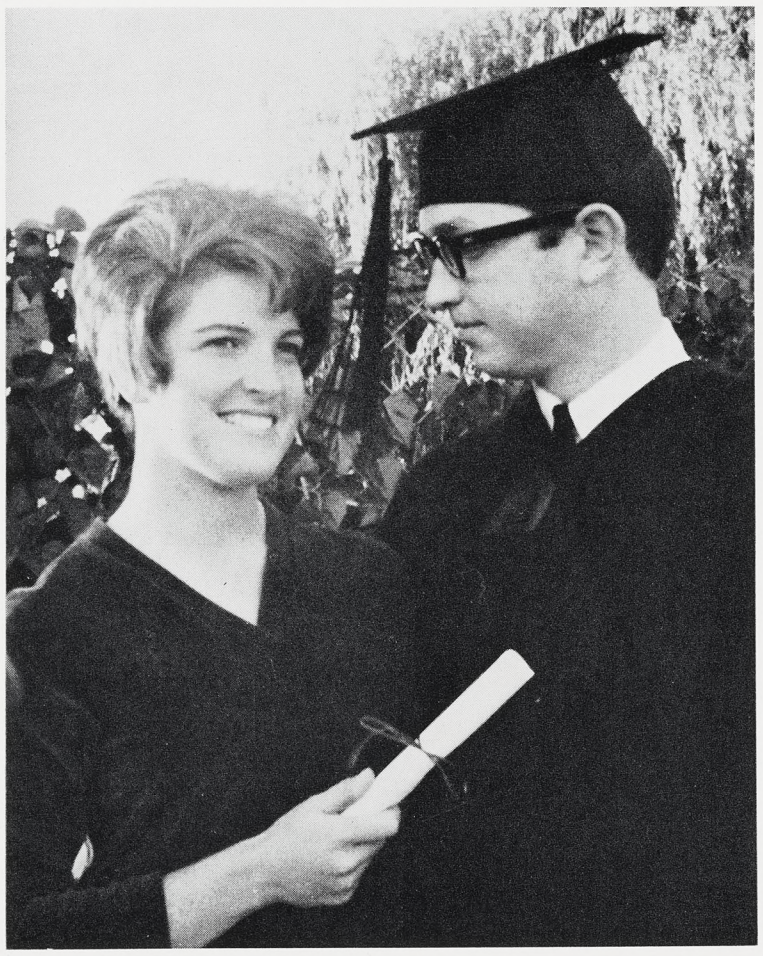
Mr. Adamski

The article by Donald F. Adamski, Nortronics' manager of the OV2 and OV5 spacecraft programs at Northrop Systems Laboratory, explains the orbital shuttle concept which has evolved from the need to carry out space missions at a lower cost. It points to the economic use of launch vehicles and to operations suggesting military, scientific and exploratory applications. The article appeared in the May issue of Astronautics and Aeronautics magazine.

In his article, Mr. Adamski presents an example program study based on actual spacecraft missions that will be flown by the U. S. Air Force Space and Missile Systems Organization in its Space Experiments Support Program (SESP). The study indicated that total program cost savings as high as 55½ per cent can be achieved using the concept.

The feasibility and cost effectiveness potential of the concept will be put to test with an actual mission to be sponsored by the SESP later this year. An Atlas / Burner II launch vehicle upper stage combination will be used to launch 10 or more separate experiments, some consisting of individual satellites. Several orbital shuttles, each different in configuration, will place some of the satellites into different orbits.

Before coming to Northrop last year, Mr. Adamski directed mission planning and payload integration activities at the Aerospace Corporation, Space Technology Support Department. Earlier, he was employed at Electro Optical Systems, Inc. and the Jet Propulsion Laboratory, both in Pasadena. While in the Space Sciences section at JPL, he was project engineer on the Ranger lunar-seismograph experiment.



PUTTING HUBBY THROUGH Long Beach State College earned for Linda Chamberlain her Ph.T. It's just an honorary degree for now but, like Bill, she hopes to return soon for her academic degree. Linda has worked full time at the Nortronics Personnel Activities office for a year and a half to help pave the way toward Bill's becoming a civil engineer.

Working Wives Help Husbands Finish Education

A Nortronics woman has just received her Ph.T.

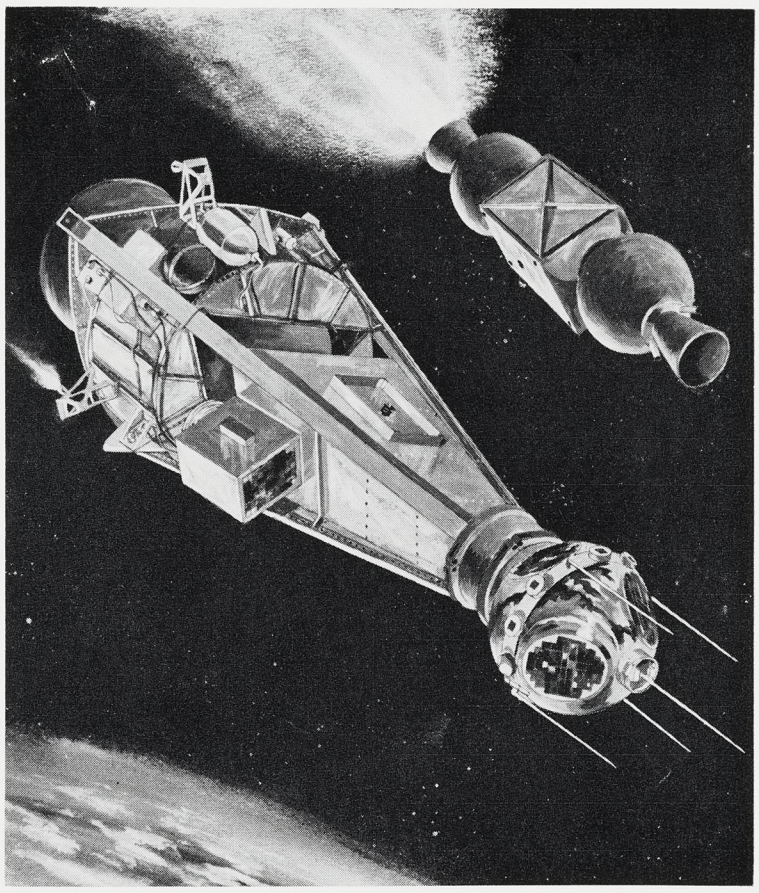
Linda Chamberlain has Put Hubby Through (Ph.T.) California State College at Long Beach by working full time in the Personnel Activities office at Nortronics Hawthorne.

Bill Chamberlain graduated last Saturday with a bachelor of science degree in civil engineering. The school's engineering department originated the Ph.T. to honor the wives who, by working, make it possible for their husbands to continue their education after marriage.

Linda has been with Nortronics for a year and a half and hopes to go back to school for her own degree.

Another Nortronics employee, Annette Ilnicki of Production Control, also has worked to put her husband through Long Beach State. John Ilnicki received his bachelor's degree in English and will join the sales department of the Pillsbury Company.

Marie Hecker is also a wife who sacrificed for her husband's education. She is in Material Cost Accounting at Nortronics. Vic Hecker received his degree in physical education.



THE ORBITAL SHUTTLE spacecraft, as shown in this rendering by Nortronics artist Bill Gray, will achieve orbit and thereafter launch one or more other spacecraft to accomplish different orbital requirements. It is an economical space vehicle to be put to a test in an actual mission later this year.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California Vol. 26, No. 13 July 3, 1968

OMEGA I Showing Set For London

The commercial version of the Northrop Nortronics Omega shipboard receiver will be displayed publicly for the first time this month in London at the world's largest exhibit of marine equipment and materials.

Known as "Ships' Gear International '68," the marine show will attract shipping executives from all over the world. The show will begin July 29 and last for one week.

Nortronics already is building Omega shipboard receivers and is developing the airborne Omega receivers for the U.S. Navy.

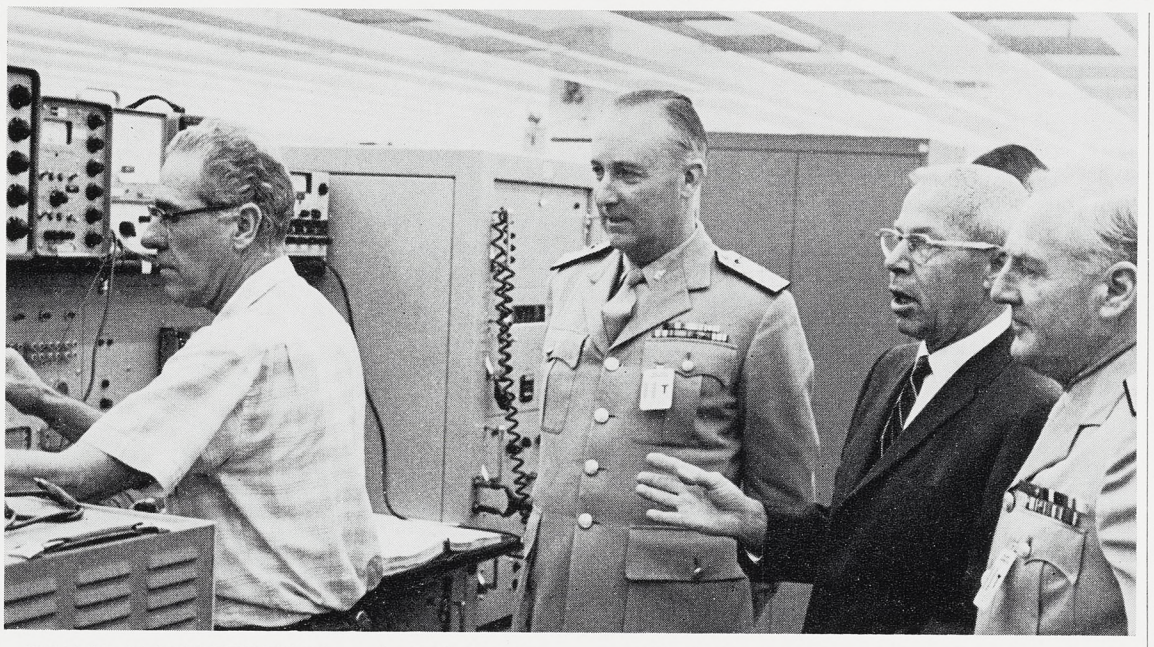
Introduction of the commercial Omega receiver will make it possible for hundreds of marine vessels throughout the world to use this new global radio navigation system. Ground transmitting stations for the system are now partially complete in cooperative efforts of the U.S. Navy and of other nations.

Sy Shenkman, Nortronics' field engineer for navigation systems, will attend the London show to demonstrate the Northrop equipment by obtaining radio fixes from Norway; Forestport, N.Y.; Trinidad; and Hawaii, where ground stations now exist. Vic Moore in Hawthorne is project engineer for Northrop's Omega I receiver.

It will be displayed as part of the Marconi International Marine Company, Ltd. exhibit.

Omega, when the ground station network is complete, will provide ships at sea with a simple and reliable method of fixing position anywhere in the world within an accuracy of one mile in daytime and two miles at night.

This ability, according to Nortronics engineers, will allow shipowners to realize savings through reduced time at sea.



ROYAL NAVY VISITORS to the Polaris Support Depot at Anaheim are briefed by Cy Seeley, chief of Electronic Production and Support, as test technician Ed Balch performs a checkout with the MK 4 test set. Vice Admiral Sir Hugh Mackenzie (right) will retire from his post as chief Polaris executive of the Royal Navy, to be relieved by Rear Admiral G. F. A. Trewby (center). The purpose of the visit was to familiarize Admiral Trewby with Nortronics' role in the United Kingdom Polaris program.

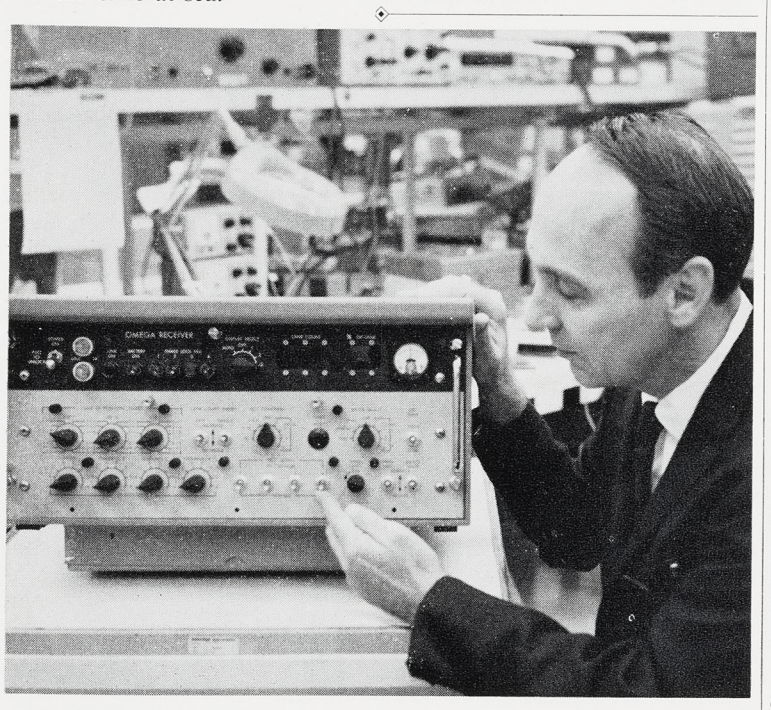
British Admirals Tour Anaheim Polaris Depot

Two high-ranking Royal Navy officers from the United Kingdom have visited the Anaheim department's Polaris Support Depot.

Vice Admiral Sir Hugh Mackenzie, chief Polaris executive of the Royal Navy, was accompanied by the officer who will assume his command, Rear Admiral G. F. A. Trewby.

Admiral Mackenzie — who will soon retire from active duty—has held his present position since the inception of the United States/United Kingdom Polaris program in April 1963.

The purpose of the visit was to familiarize Admiral Trewby with Nortronics' role in the United Kingdom Polaris program. In addition to the Polaris briefings, the guests toured the Product Support Depot, observed Electronics Assembly and visited the Tape Preparation area.



NORTRONICS' OMEGA I navigation receiver will be featured at the world's largest ships' gear exhibit in London this month. Vic Moore, Omega I project engineer, illustrates the simplicity of operation of this solid state, single frequency unit. To obtain a navigational fix, the operator can select the best four of eight available stations.

Aerodynamicist Awarded European Study Fellowship

A Nortronics aeronautical engineer has been awarded a one-year postgraduate fellowship to the von Karman Institute for Fluid Dynamics in Brussels, Belgium.

Mr. Waldrop

William R. Waldrop of Nortronics Huntsville was one of 20 students from 10 NATO countries awarded this honor.

The institute was founded in 1956 by the late Dr. Theodore von Karman for the purpose of giving students from many countries a chance to work and study together in modern, well equipped aerodynamic laboratories.

At Nortronics, Mr. Waldrop is performing aerodynamic support for the Aero-Astrodynamics Laboratory of the National Aeronautics and Space Administration's Marshall Space Flight Center in Huntsville. He is conducting experimental research and development and analytical programs in support of Saturn launch vehicle development.

Before coming to Northrop, Mr. Waldrop was an aerodynamicist with the Research and Technology Division of the Air Force Systems Command.

He received his B.S. degree in aeronautical engineering from Auburn University in 1961, and performed graduate work at Ohio State and the University of Alabama where he will take his M.A. degree in aerospace engineering in August.

Mr. Waldrop is a member of the American Institute of Aeronautics and Astronautics and the Northrop Management Club. His wife and two daughters will accompany him to Belgium.

Oakes Chosen To Head Support Operations

The appointment of William J. Oakes as manager of the Northrop Support Operations department has been announced by Frederick Stevens, vice president and Nortronics general manager.

Mr. Oakes most recently held the position of director of Support Operations Development and was also responsible for departmental administration. He has held various managerial positions within the Support Operations organization and has been associated with Northrop for the past 16 years.

Mr. Oakes

Mr. Oakes holds a bachelor of science degree from Georgia Tech, a master of science degree from Massachusetts Institute of Technology and a master of science degree in engineering from UCLA.

Employee Elected City Councilman

A Nortronics employee has been elected to the Seal Beach City Council, second district, for a four-year term.

Mr. Fuhrmann

Conway Fuhrmann — a standards engineer in Product Assurance at Hawthorne — was chosen by 54 per cent of the electorate in a special runoff election over two opponents.

Councilman Fuhrmann assumed his office Monday, and at that time also became a director of various city and county boards and agencies.

Army Orders NORVIPS For Planes

Northrop Corporation has been awarded initial funding of $5,487,544 toward an $11 million program to produce flight safety warning systems for the U.S. Army's OV-1 aircraft and CH-47 and CH-54 helicopters. The contract was issued by the U.S. Army Electronics Command (ECOM) at Ft. Monmouth, New Jersey.

Aircraft voice warning systems produced by Northrop's Nortronics Division are "talking troubleshooters" which use a woman's voice to alert crew members to hazardous conditions. Because low altitude operations demand extra pilot concentration on external terrain, the Northrop Voice Interruption Priority System (NORVIPS) reduces the amount of visual attention required inside the cockpit.

Pre-determined malfunction messages are recorded, and vital aircraft and weapons systems are monitored by NORVIPS, called AN/ASH-19 by the military, through a network of fault sensors. When a problem occurs, the woman's voice transmits its warning over crew members' headsets, and then repeats it until the problem is corrected.

Included with the NORVIPS system is Northrop's Continuous Inflight Performance Recorder (CIPR) designed to provide a permanent record of all warning events occurring during a mission. CIPR also acts as the pilot's "secretary" by making it possible for him to record his comments.

In some applications CIPR is capable of recording the total elapsed time of helicopter transmission over-torque and other similar items, thus easing future maintenance workloads.

The contract also carries an option to bring the total AN/ASH-19 NORVIPS to be procured to just under 1,000 units. First units will be installed aboard new vehicles with subsequent deliveries scheduled for retrofit installation.

(See NORVIPS, page 6)

Kessler Becomes Chairman of IDEP Advisory Board

A Nortronics supervisor at Anaheim has been chosen for a significant role in the Interagency Data Exchange Program (IDEP).

David Kessler, supervisor of Reliability Engineering, and Northrop's IDEP representative, was elected chairman of the Contractor's Advisory Board at a recent meeting in Los Angeles.

Mr. Kessler

The Contractor's Advisory Board is composed of members elected by the contractor participants.

Five Air Force Cadets Study Research Field

Five Air Force Academy cadets are at work in the Northrop Corporate Laboratories as research assistants this summer in a unique program now in its fourth year.

The program allows first classmen, or seniors, and newly commissioned second lieutenants from the Academy to gain practical experience in research and an understanding of industrial and government research activities.

Northrop was the firm originally selected for this program, which presently includes only one other aerospace company.

Candidates are chosen on the basis of academic achievement.

Colonel David E. Galas, Northrop Air Force plant representative, briefed the five cadets yesterday on the missions and functions of his office and local military resources.

Following the six-week stay at Northrop, the participants are required to submit a paper to the Academy, presenting the results of their work. The cadets are therefore given a chance to make real contributions in their areas of interest.

Charles Clemmensen, a first-classman, is assigned to Dr. Charles Martell, director of the Life Sciences Laboratory. Donald Caughlin, a new second lieutenant, is working under Dr. Gerard Hasserjian, director of the Electromagnetics Lab.

Lieutenant Caughlin is the son of Mr. and Mrs. Donald Caughlin of Torrance. His father is a staff assistant at Nortronics Palos Verdes.

Warren Jaeger, a first classman, is also assigned to Dr. Martell; Allan Hunt, a first classman, who is working under Dr. Orlie Curtis, acting director of the Solid State Electronics Lab; and Maurice Edlund II, a second lieutenant, assigned to Dr. Yudi Gupta, director of the Materials Sciences Lab.

Employee's Son Commissioned A.F. Lieutenant

Michael J. Sterling, a Northrop son and former Norair employee, has been commissioned a second lieutenant in the U.S. Air Force and assigned to Lowry AFB, Colorado, for training as an air intelligence officer.

Lt. Sterling

Lieutenant Sterling is the son of George Sterling, chief of Aircraft Demonstration Programs, Customer Relations, at Norair.

He worked summers at Norair in Graphic Operations and Advanced Program Integration Engineering while studying for his A.B. at Stanford University and his M.B.A. at UCLA.

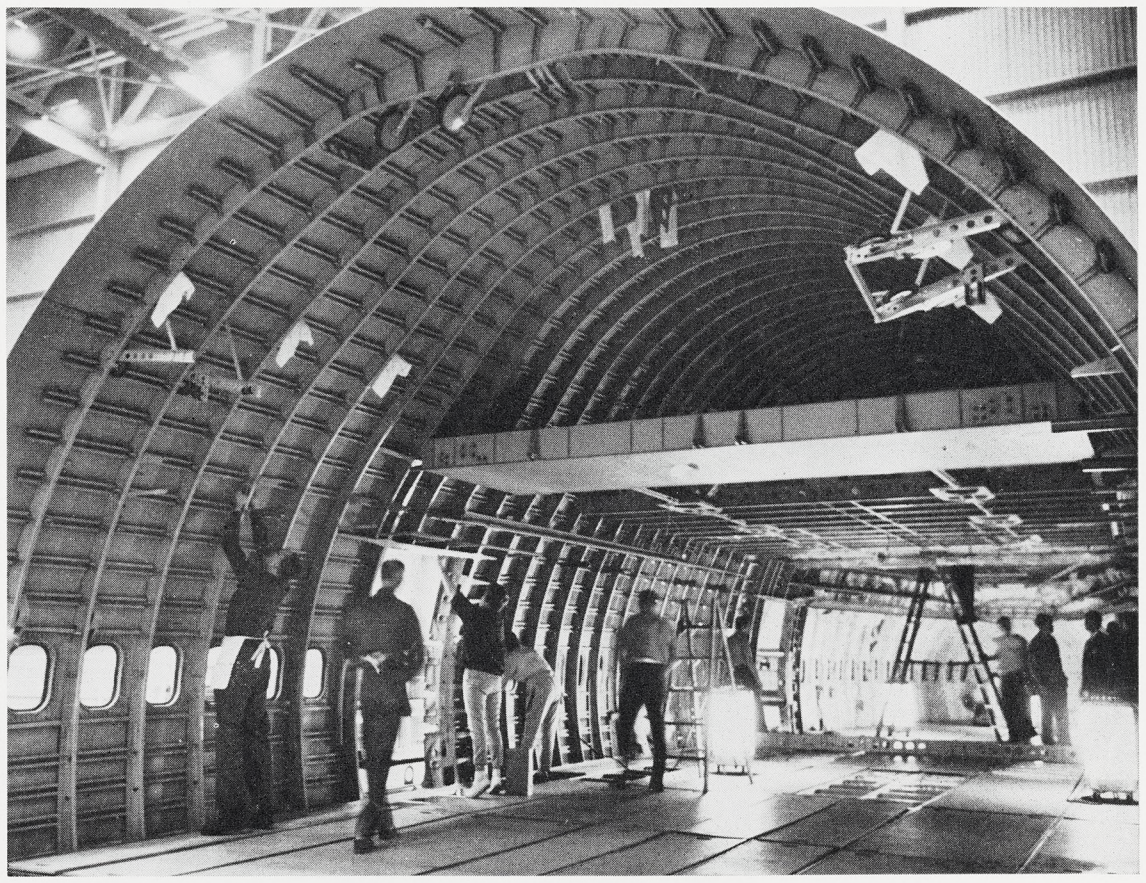
George Sterling is a veteran of 26 years of Northrop service, a World War II Navy pilot and a former Norair flight test engineer.

IT'S A FACT AT NORTHROP

Fortune Magazine's annual listing of the 500 largest U.S. industrial corporations for 1968 shows that Northrop has made a big leap forward in its relative rank with other big companies.

Northrop is now rated as the 181st largest U.S. industrial corporation in terms of 1967 sales. Last year Northrop was ranked as the 223rd largest company in terms of 1966 sales. Rankings are based on total annual sales. Northrop sales for fiscal year 1967 were $469,448,000; for fiscal 1966, $357,278,000.

It appears probable that Northrop will rank even higher next year, since this year's sales are running ahead of 1967.



A SUPERJET IS BORN—Workers at The Boeing Company's 747 assembly plant are dwarfed by size of Boeing 747 jetliner being assembled. This is Section 42, one of three main fuselage sections built at Northrop Norair and shipped to Everett, Washington, for assembly.

Students Tour Division

Northrop Norair was host last month to a group of 25 students from Jefferson High School for a plant tour and individual discussions with a select group of Norair employees.

The visit was arranged in conjunction with the Willowbrook Job Corporation, an organization dedicated to motivating Negro youngsters to attend college.

Following a visit to Norair's Personnel Development and Training facility where they viewed films and classes in progress, the visitors toured the F-5/T-38 assembly line.

Joining the group at that point were Mayo Loving, Floyd Boggus, Carroll Hicks, Ray Henry, Bill Justice, Harold R. Washington, jr., Willard Hall and John Graham.

After lunch these individuals took small groups of the visitors back to their respective work areas to discuss with them their jobs, personal training, responsibilities and improved prospects for advancement.

I. R. Director Named To Texas Judgeship

A director at Brown & Root-Northrop has been appointed the new Corporation Court Judge in El Lago, Texas.

William Kurz, director of Industrial Relations, will serve a one-year term.

His background for the position includes university level courses in labor law and business law.

Mr. Kurz's knowledge of court procedures extends into his position with Brown & Root-Northrop.

THE TWO-PARTY SYSTEM

Political Parties Protect Democracy

Editor's Note — Following is the first of a series of articles designed to acquaint Northrop personnel with America's two-party political system; to encourage everyone to support his party and candidates, and then vote in the November elections.

Most people in the world still live under the world's oldest form of political society—one man, or one group, rule.

Under this system, the tribal chieftain, the king, dictator or party secretary dictates what is "best" for his people. If the people happen not to like what he thinks is best, they have no recourse except revolt.

History is filled with examples of dictatorial or paternalistic rule. It is also sprinkled with examples of democracy, the noble experiments where the people were given, or took for themselves, the right to choose their leaders.

The American two-party system is one such noble experiment.

This experiment will succeed as long as people—all eligible people—exercise their right to choose candidates and vote for their government officials.

Conversely, the nation will quickly revert or descend to the paternalistic or "papa knows best" one-man rule if people get lazy or careless about their politics. If they fail to take part in the political procedure, the party system atrophies and will die from lack of exercise.

We often forget that our country was not born with a two-party system. The Constitution did not make provision for political parties. George Washington was elected unanimously, both times. America then might well have settled into the habit of a paternalistic or "papa knows best" form of government, without opposition and with the consequent dangers of power and corruption.

Fortunately, although political parties did not exist in Washington's time, the Revolution with its Patriots (Whigs) and opposing Loyalists set the stage for our two-party system.

Political life as we know it today owes its origins to fundamental differences which developed inside Washington's cabinet between Thomas Jefferson and Alexander Hamilton. The Federalist party grew out of Hamilton's economic concepts. Jefferson built the original Republican party for the specific purpose of opposing Hamilton's views.

When Washington retired as our only non-partisan president, the Hamilton-Jefferson conflict emerged as two full-fledged political movements and the two-party system was born.

The Republicans of today are descendants of the original Federalists by way of the Whigs. Today's Democratic Party traces its lineage to the Jeffersonian Republicans. Some characteristics of the original division between the two movements still exist.

The first official convention of the Democratic Party was held in Baltimore in 1832 when Andrew Jackson was nominated for President. The first official nominating convention of the Republican Party, held in Philadelphia in 1856, selected John C. Fremont as its candidate. Before official conventions of the parties, nominees were selected in State legislative caucuses and irregular public meetings of the people.

Although numerous splinter parties have appeared in the history of American politics, virtually all of these vanished into limbo after only one election, primarily because the so-called "parties" were based upon transitory issues.

Other splinter parties will doubtless appear in the future, but it is a safe prediction that America's democracy will continue to be based essentially upon the two-party system.

NEXT — WHY TWO PARTIES?

Summer Softball Teams Compete in 12 Leagues

Northrop summer softball activities are in full swing with 28 teams competing in 12 leagues at the major sites.

Norair has 16 teams playing in Los Angeles County leagues; Nortronics has 12 teams, six playing with Norair teams in the County leagues and six in an in-plant loop at the Anaheim Facility, and Ventura has one team competing in the Conejo Valley Recreation and Parks District "A" league.

Norair fields teams in regulation pitch softball with a 12-inch ball, slo-pitch with a 12-inch ball and slo-pitch with the 16-inch "pumpkin" ball.

The Talons (7-0), the Hawks (4-0), the Counts (6-1) and the Cavalleros (3-1) are in first place or tied for the top spot after the first round in regulation pitch 12-inch leagues.

Nortronics Hawthorne boasts the Rogues (5-0) who are league leaders in slo-pitch 12-inch competition after the first round. The Supporters (4-1) are first in their slo-pitch 16-inch league.

Anaheim's NRC slo-pitch league is led by Montgomery's Marauders (3-0). Play in the in-plant loop is divided into two rounds with the 12-inch ball being used in the first round and the 16-inch ball in the second.

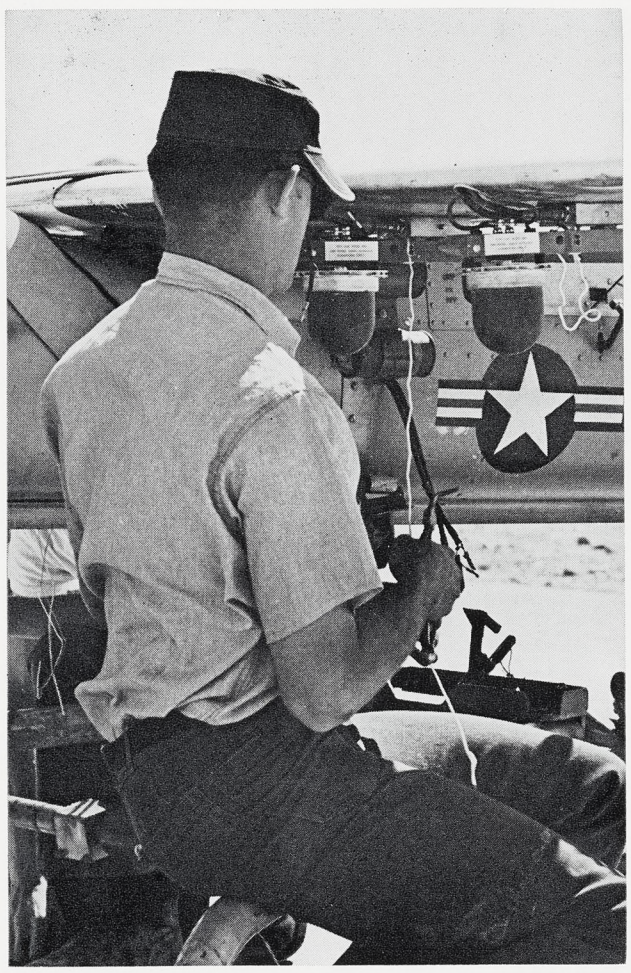
Perry Watson, Anaheim Security, won a distinction of sorts by raising his batting average to .043 with a hit after drawing blanks in 23 previous at-bats. For this feat, he was awarded a trophy by the league.

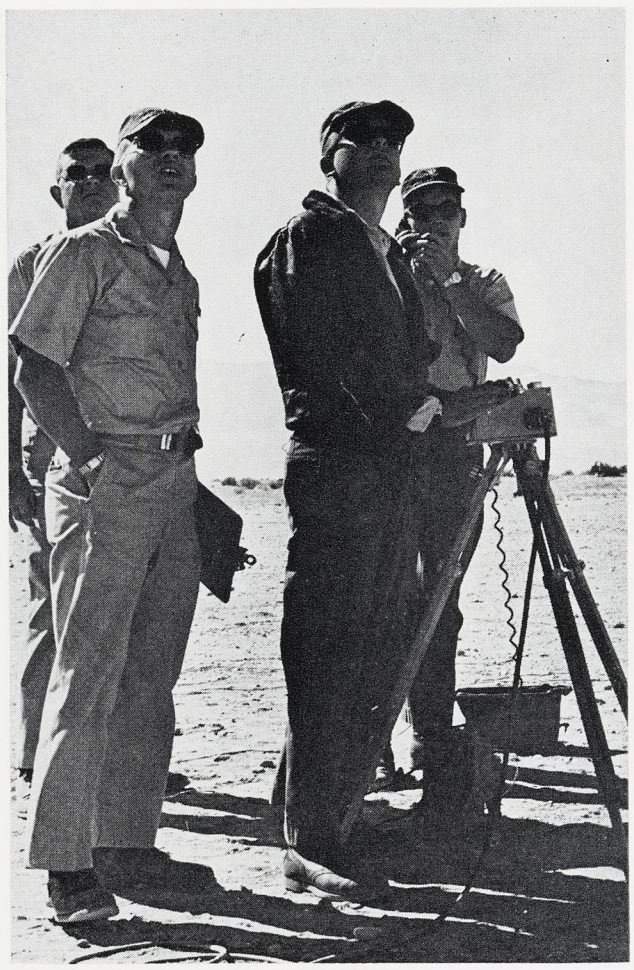
Ventura's team has not yet begun play in the Conejo Valley league which features regulation pitch 12-inch softball.

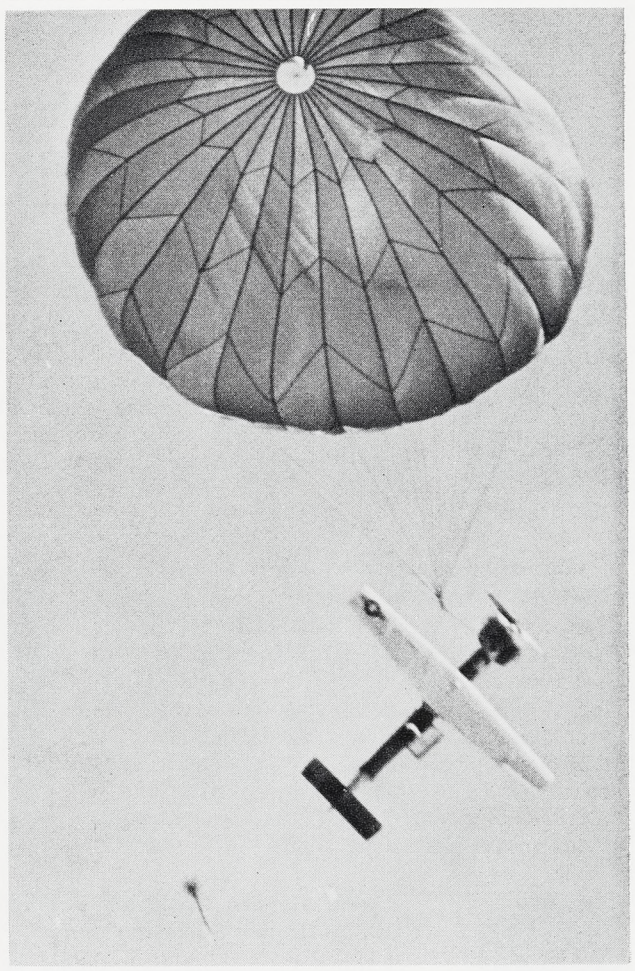
However, the Ventura team took third last year and Ventura Baseball Commissioner Dale Thompson thinks the prospects for another high finish are good.

"Wherever the real power in government lies, there is a danger of oppression. In our government, the real power lies in the majority of the community."

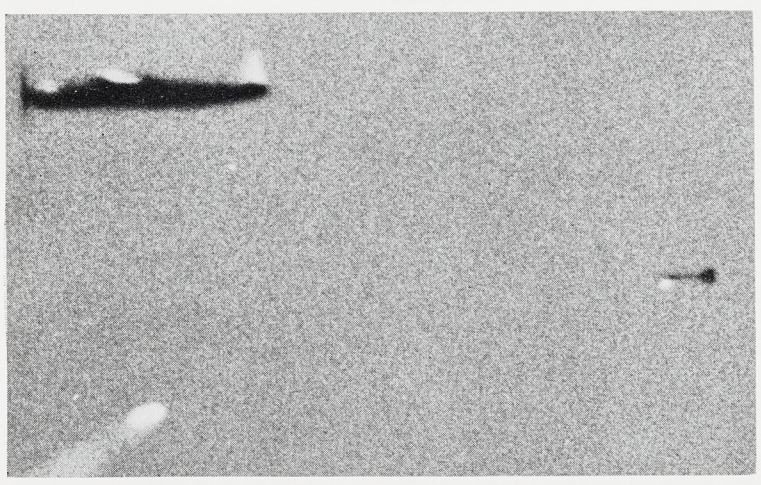
— James Madison

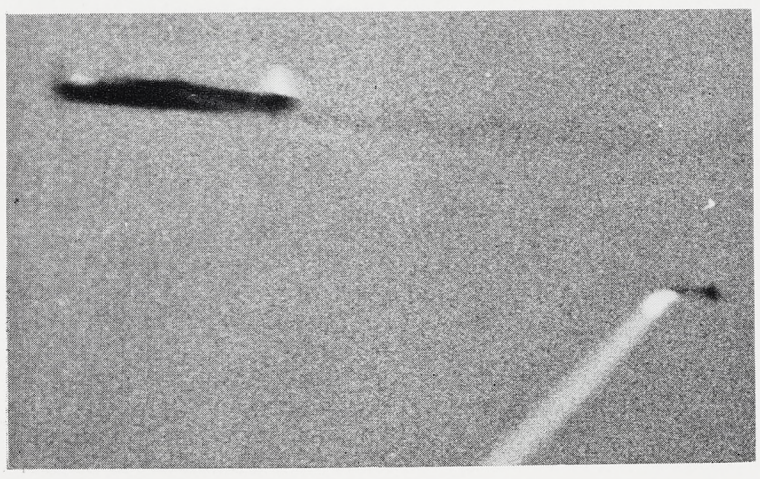






KD2R-5 target drones are maintained and operated for Navy and Marine gunnery exercises in Southern California by the Navy's VC (Composite Squadron)-3 of North Island Naval Air Station, San Diego. Close-up of infra-red heat source attached to drone's wing is seen above as member of VC-3 target unit readies drone for launch. VC-3 controller and other target unit personnel (center photo) watch drone which has completed mission, descend under parachute (right photo). Below, marine trainee at Twenty-Nine Palms fires Redeye missile.





TWENTY-NINE PALMS

Where the Redeye Meets the KD2R-5

Aside from a versatile tree surgeon, a trip from Thousand Oaks to Twenty-Nine Palms could only be exciting to a target drone fancier.

Twenty-Nine Palms, near the heart of Southern California's Joshua Tree country, is the local home of "the world's smallest guided missile," the shoulder-launched Redeye.

Produced by General Dynamics' Pomona Division, the Redeye is a supersonic ball of fire which is aimed and fired like a bazooka. Everytime a Marine stands up and launches a Redeye, you want to run out and measure the crater in his chest. But the Marines, who are in their final week of basic training, walk away unscathed, and they very seldom miss their target.

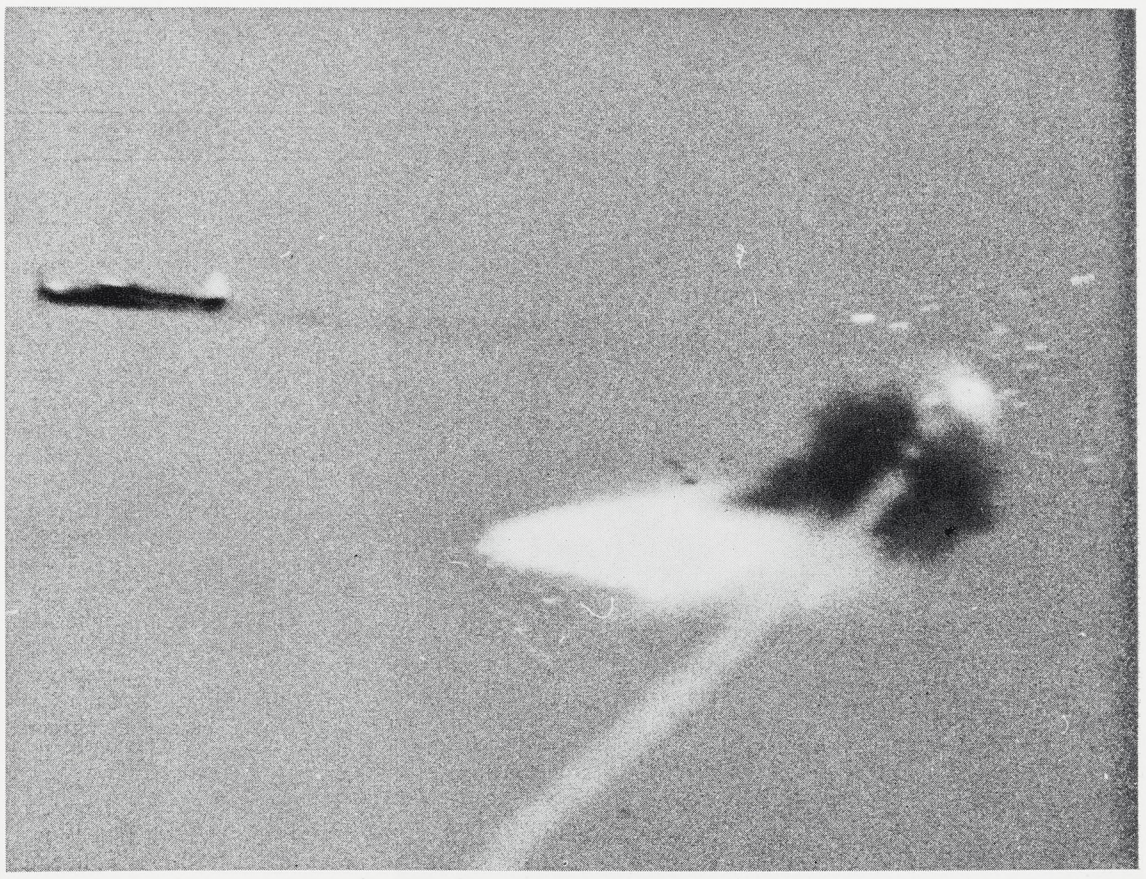
Which brings us to the real hero of this story.

The KD2R-5 target drone, produced in the oak-studded Conejo Valley by Northrop Ventura, has been the standard, subsonic target for the military services for more than a decade. Even flying at 175 knots (220 is top speed) over the desert Marine base, the KD2R-5 is a sitting duck for the heat-seeking Redeye.

But the craftsmanship which went into the target at Northrop Ventura is being preserved, thanks to an accessory, called a tow dart. The tow dart is an aerodynamically stable unit which carries an infra-red augmentation device. Four darts are attached to each drone and, upon electronic command from the drone's controller, are disconnected one at a time to trail behind the drone on a nylon cord.

The Redeye missile senses the heat crucible on the tow dart rather than the weaker heat source of the target drone's engine. (At Navy exercises, the KD2R-5 flies under the alias, MQM-36A.)

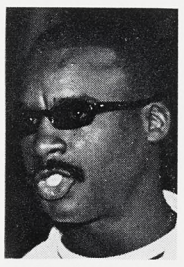
The result is realistic weapons training at a tremendous cost savings to the military. And it's not just the U.S. government that is saving money. At last count, the KD2R-5 had been exported to 18 other countries.



WHITE BALL in middle photo at left is rocket exhaust of Redeye missile streaking toward Northrop Ventura KD2R-5 target drone flying over U.S. Marine range near Twenty-Nine Palms. Sensing tow dart, the Redeye bypasses drone and is stopped by Northrop photographer Wady Medawar at moment of impact with the tow dart.

WHAT DO YOU THINK?

Do You Believe 18-Year-Olds Should Be Allowed To Vote?


Mr. Coleman

Terry Coleman, tool operator, Norair:

Definitely, although I am over 21. I was in college at 16, and a lot of the debates were among young people under 21. They are very alive at that age. But they weren't allowed to voice their opinions. The candidates would come mainly to the college campuses and talk to the students, thereby keeping them well informed.

Mr. Hampton

Glen Hampton, spares requirement analyst, Nortronics Anaheim:

No, I really don't. I don't believe that they have really developed a full foresight of what is coming in the future. They are only thinking of today—I'm not saying this of only 18-year olds, though. They are smart enough, but they haven't been around to see what is going on or has been established by bills or laws in the past. But you do find some young people more mature than some adults.

Mrs. Brood

Linda Brood, Industrial Relations senior clerk, Nortronics Anaheim:

I think so. I think they should be able to. You know pretty much what you think at that time. They talk about it more now in school. They are more informed — especially in the junior colleges now. The kids today are a lot more educated than they were before. I'm all for the idea that if you fight in Vietnam you should be able to vote. In some states you can vote at 18.

Mrs. Sanford

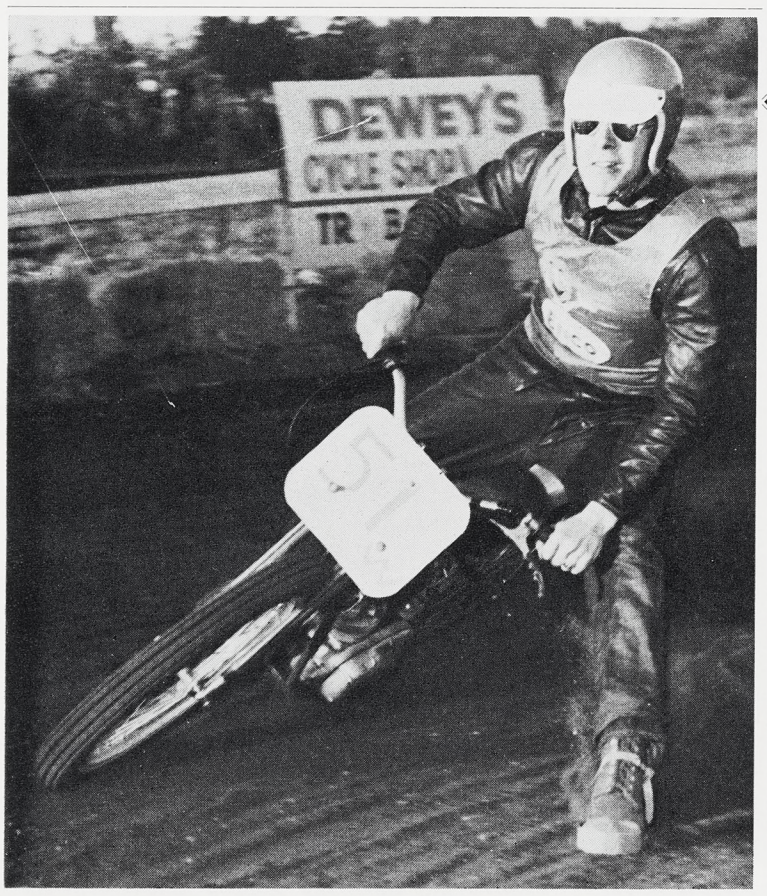
Gladys Sanford, electrical assembler, Nortronics Anaheim:

I think if they are old enough to be drafted they are old enough to vote. If they can fight for their country they should have the right to vote for the leaders of it. They should have a word in the running of their country. Some boys do grow up in the service, but a lot of them are quite responsible citizens.

Mr. Palmer

Dean Palmer, aircraft electrician mechanic, Norair:

In reality, I don't think they should. They aren't stable enough. I know I wasn't at that age, and I don't know if I am now.



AROUND THE TURN—Norair's Don Dorsey shows form that helped him win top motorcycle racing honors in Pacific Northwest. Mr. Dorsey and a partner are entering the 1,000 mile overland Tijuana to La Paz, Mexico, race this fall.

'MEN FROM MARS'—Foreman Fred Chandler (far left) describes "space suits" worn by technicians assigned to mixing pyrotechnics at Northrop Carolina to Richard R. Nolan (third from left), Northrop senior vice president, Manufacturing and Administration, and member of the board of directors of Northrop Carolina. Mr. Nolan periodically visits Northrop locations to review progress in such areas as new products, manufacturing methods and industrial relations. Suits are worn by Chester Lynch on left and Dallas Chandler on right.

Four Air Force Officers Complete Training Course

Four Air Force officers have successfully completed a ten-month Education With Industry training assignment at Northrop, according to Harry Blocher, supervisor of Customer Training at Norair, who coordinated the program.

The Air Force Institute of Technology officers are Captains James E. Drumgool, George W. Mickey, Carlos L. Naumann and Robert W. Stewart.

The objective is to increase the officers' knowledge of industrial management, and thereby better equip them to meet Air Force requirements in the procurement of aerospace systems and equipment.

The officers followed a course of study and discussion with the management of departments of the Norair, Nortronics and Ventura divisions.

The Air Force Institute of Technology rates the Education With Industry program at the master's level, and will assign four more officers to Northrop.

$35 Million in Revenues Seen for Carolina by '73

A five-year business forecast of sales reaching $35 million has been predicted for Northrop Carolina by its president, George F. Douglas.

Mr. Douglas told a gathering of 300 members of the Nortronics Management Club at Long Beach

MR. DOUGLAS

that approximately 15 per cent in increased business is expected each year during the forecast period. "And we have reason to expect that this positive outlook will continue beyond the forecast period," he said.

For Mr. Douglas, his visit was somewhat of a homecoming. He was formerly vice president of Engineering at Norair, and vice president and general manager at Northrop Ventura.

The executive of the Asheville, North Carolina subsidiary of Northrop, spoke on the "Past, Present and Future of Northrop Carolina, Inc."

Another guest at the Management Club dinner was David Ferguson, vice president and manager of Nortronics' Precision Products Department at Norwood, Massachusetts.

Mr. Douglas listed propulsion, chemicals and ordnance as Northrop Carolina's major business area and predicted that textile machinery will figure prominently in the future of the subsidiary.

TEST OF ENDURANCE

Motorcyclist Plans 1,000-Mile Race

The 1,000-mile overland route from Tijuana to La Paz, Mexico, is a driver's nightmare — hot, waterless, and with few improved roads—a challenge even to four-wheel drive vehicles with ample provisions.

This makes Don Dorsey's plans for covering the Baja California, route on a motorcycle, in 24 hours or less, all the more daring.

Mr. Dorsey, a Norair 747 Program inspector, and a partner will attempt their feat November 4-7 in the second annual Mexican 1,000 Rallye, an endurance race open to Jeeps, trucks, dune buggies, motorcycles and stock cars.

Mr. Dorsey will ride the first 500 miles of the race, turning his motorcycle over to his partner at El Arco for the final leg.

The first segment — Tijuana to Ensenada — will be a sedate run, within speed limits and against set times. From that point the objective is to beat some 200 other entries to the finish line.

The Dorsey-team motorcycle is a 1967 Maico, a German-built 360 cc speedster modified with Italian-built suspension, elongated chassis, engine modifications and other innovations.

The riders will wear crash helmets, heavy boots and gloves and a special two-piece suit with expanding pockets. Into these they will cram tools, spare parts, candy and water to sustain them in what they plan to be 12 hours of riding, Mr. Dorsey during daylight, his partner at night.

Gasoline and the second rider will be airlifted to the meeting point, with stops to deposit fuel at pre-arranged points on the route.

Mr. Dorsey calls his team "a very small frog in a big, big pond." That's because many entries will be backed by automobile and motorcycle manufacturers and dealers, major oil companies and others.

"This is big-time racing," Mr. Dorsey says. "The top prize is $5,000. The entry fee is $250. We already have more than $2,000 invested in our motorcycle."

Since the race is primarily a test of endurance, of both man and machine, Mr. Dorsey and his partner are preparing now for the race in November. They are running, lifting weights, swimming and doing exercises to build physical stamina, while running their motorcycle over rough terrain to iron out "bugs."

Mr. Dorsey is a veteran motorcycle racer. He was the top short-track rider in the Pacific Northwest in 1963 and ranked fourth in the nation in American Motorcycle Association standings. He retained a top national ranking in 1964 before a leg injury curtailed his racing.

He came to Northrop last February after working two years for The Boeing Company in Seattle.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Plymouth, 1966 Barracuda, 273 4-bbl., p/s, p/b, $1,750. 213-675-2304. A

Chevrolet, 1956, 2-dr., 348 eng., 4-spd. trans., $350. 213-751-2223. A

Le Mans, 1963, 4-cyl., 4-spd., 4-bbl. carb., $750. 213-672-7978. A

Station Wagon, Falcon, 1965 2-dr., V-8 eng., p/s, auto. trans., r/h, $1,200. 714-962-4134. A

Cadillac, 1963 Coupe de Ville, full power, a/c, $1,595. 213-631-3656. A

Pontiac, 1962 Tempest, std. trans., $375. 213-370-5287. A

Dodge, 1960 4-dr., low miles, $150. 213-752-3273. A

Station Wagon, 1959 Rambler, V-8, $299. 213-670-4342. A

Pontiac, 1966 GTO convt., custom whl. covers, p/s, p/b, turbo Hydro., $1,795. 213-294-9535. A

Dodge, 1963 model 330, r/h, std. shift, 6-cyl., $575. 213-672-1115. A

Chevelle, 1964 Malibu, 2-dr., r/h, p/s, a/c, auto. trans., $1,450. 213-323-9185. A

Station Wagon, 1963 Chevrolet Impala, 9-pass., p/w, p/seats, p/s, p/b, auto., 327 cu. in. V-8, $825. 213-329-4090. A

Buick, 1963 Le Sabre, 4-dr. h/top, a/c, p/s, p/b, r/h, $1,000. 213-371-1445. A

Mustang, 1966, r/h, p/s, p/b, auto. trans., new tires, $1,875. 213-831-1090. A

GTO, 1968, p/s, turbo Hydromatic trans., $3,195.77. 213-675-7410. A

T-Bird, 1963, convt., $995. 213-396-5428. A

T-Bird, 1963 h/top, $1,125. 213-635-3056. A

Porsche 911, 1966, sunroof, AM-FM, stereo, $4,365. Box 1301. A

Ford, 1956, 4-dr., auto., V-8, r/h, $150. 213-675-9433, 213-757-6068. A

Station Wagon, 1967 Toyota Landcruiser, 4-dr., 4-whl. drive, Warren hubs, p/winch, many extras, $2,995. 213-545-5995. A

Ford, 1964 Sprint, convt., reblt. eng., new tires, $1,100. 213-644-6061. A

Chevrolet, 1966 Impala 327, r/h, p/s, fact. air, $2,000. 213-675-4998, 213-676-1522. A

Porsche, 1964, Model C, AM-FM radio, new clutch, tires & exhaust, $2,900. 213-831-3267. A

Corvette, 1965 Sting Ray w/fuel injection, mag wheels, many extras, new tires, $2,950. 213-374-2756. A

Falcon, 1961 2-dr., radio vibrasonic, new Dunlop tires, 1/8" mahogany paneling, $500. 213-320-2100. A

Chevy II, 1967 Super Sport, h/top, 327 V-8, 4-spd., mag whls., r/h, p/s, p/b, $2,240. 213-371-3201. A

Dune Buggy, 1961, reblt. VW eng., fiberglass body, top, tuned exhaust, rear seat, $1,400. 213-322-7869. A

Chevrolet, 1962 Impala S.S., V-8, 409, 4-spd., w/2 4 bbls., new trans., $650. 213-834-1592. A

Ford, 1932 3-window cpe., new reblt. Olds. eng., Hydromatic trans., $450. 213-892-7972. A

Station Wagon, 1964 Dodge, 6-pass., air, p/s, p/b, $1,200. 213-831-4586. A

Buick, 1963 Skylark, V-8, auto. trans., p/s, radio, $1,050. 213-830-6163. A

Cadillac, 1963 Fleetwood 60 Special, full power, air, fact. cast alum. wire whls. w/ 30,000 mile guarantee on tires, $1,995. 213-541-1321. A

MGB, 1964 roadster, r/h, wire whls., chrome roll bar, new clutch, wheel bearings & battery, $1,700. 213-375-9657. A

Pontiac, 1963 Le Mans, 326 V-8, floor console, auto. trans., r/h, p/s, 2 near new tires, $875. 213-679-0918. A

Renault, 1959, 6 v., r/h, all or parts, $95. 213-370-2876. A

Ford, 1957 4-dr. sedan, needs paint job, $85. 213-774-4281. A

Chevrolet, 1963 Biscayne, V-8, 4-dr., take over $49 mo. pymts., $980 bal. 213-320-3529. A

Household Items For Sale

Hide-A-Bed, Riviera & matching chair, $30. 213-675-5522. B

Rug, oval, braided, 10x14 reversible, pad, $35. 213-363-6617. B

Table Lamps, 2 matching, w/round shades, rose-beige base & light beige, 26" high, $25. 213-675-9530. B

Sofa & Rocker, matching, Naugahyde, $120. 213-374-3060. B

Coffee Table, matching 2 end tables, blonde, $30 or sell sep. 213-370-9470. B

Hot Water Heater, 20-gal., factory reblt., never used, $15. 213-371-2948. B

Range, Gaffers & Sattler, broiler, griddle, auto. oven, $45. 213-754-7947. B

Dining Room Set, $35. 213-545-3495. B

Household Items For Sale

Washer, General Electric, needs work, $20. 213-644-2607. B

Dishwasher, portable G.E., 1 yr. old, $125. 213-645-5786. B

Rocker, Boston, w/floral pads, $20. 213-378-8979. B

Bed, dble., box springs, mattress & frame, 2 yrs. old, $50. 213-676-4471. B

Stove, Kenmore, gas, 36", coppertone, used 8 mos., $150. 714-639-5325. B

Sectional, 4-pc. liv. rm. set & TV, RCA 21", $150. 213-662-5388. B

Dining Room Set, Early American decorator, white, gold & maple, 4 chairs, round pedestal table & hutch, $300. 714-637-5059. B

Oven, elec. bltin-type, Gaffers & Sattler, broiler, auto., 2 yrs. old, $75. 714-826-3631. B

Rug, 9x9 brown & white tweed, pad, $15. 213-644-3116. B

Washer & Dryer, G.E. filter flow, $225. 213-678-1649. B

Sewing Machine, Singer portable w/all attachments, $45. 213-379-3487. B

Dining Table, modern, walnut, 6 chairs, Never-Mar top, $150. 213-889-0793. B

Chair, tan Naugahyde, $25. 213-867-5809. B

Coffee Table, 40", round w/2 large commodes, modern, other household items, $85. 213-673-1253. B

Range, gas, apt. size, oven, $50. 213-532-7634. B

Miscellaneous For Sale

Tent Trailer, h/top, sleeps 4, water tank, other access., $400. 213-373-2074. C

Movie Camera, Eastman M2, never used, $20. 213-672-2370. C

Sloop, Islander 32, full race, wheel, auto. pilot, terms, $16,250. 213-345-2910. C

1/6 Airplane Share, Piper Colt, 108 h.p., 100 hrs. s.m.o.h., King 150A, full panel, $4 hr. wet, $400. 213-759-5717. C

Aquariums, 2, 5-gal. w/equip., & Betta tank, $15. 213-375-0351. C

Micrometer, Starrett 0-1, $12. 805-498-3549.

Metal Lathe, 36" Craftsman Atlas, reverse switch & stand, many extras, $750. 213-865-5084. C

Dinghy, 8', all sports yak, $50. 213-831-9545. C

Luggage, hvy. duty Samsonite, men's 2-suiter, ladies' wardrobe, pullman, overniter, train case, $50. 213-679-6982. C

Cabin, A-frame, 5 yrs. old, R-2 lot, Swedish metal fireplace, close to golf course & skiing area, $21,000. 213-377-3888. C

Boat Mold, 16' female, top deck & hull, $200. 213-679-7840. C

Accordion, 120 bass, Castle, $75. 213-324-0649. C

Lawn Edger, adj. angle, 4-cycle Briggs & Stratton eng., $40. 213-325-8478. C

Tape Player, Muntz, never used, wood paneling, 4-track, $20. 213-672-8468. C

Sand Box, child's 4-seater w/canopy & bag of sterilized sand, $12. 213-325-3724. C

Air Conditioner, 11,000 b.t.u., 110-120 volt, $190. 213-675-1860. C

Lawnmower, 20" rotary, 3 h.p. Briggs & Stratton, 4-cycle, $30. 213-320-3529. C

Trailer, 16' Gibson, sleeps 6, elec. brakes, refrig., awning, jacks & controller, $475. 714-827-9356. C

Bar Stools, 2 antique white legs, yellow seat & back, $35 ea. 213-759-5053. C

Lot, ½ acre, near Redwood Nat'l. Pk., 15 mi. so. of Oregon border, $1,000 equity, $1,400 bal., $2,400. 805-942-5306. C

Camera, 35 mm Miranda-DR, f/1:9 Soligor lens, case, $85. 213-964-0182. C

Duplex, No. Manhattan, $38,500. 213-375-7130. C

Pups, French poodle, pedigreed, champ. background, 2 males, 8 wks. old, $50 ea. 714-524-1182. C

Ham Equipment, Johnson desk kilowatt & cent. elec. 100 V exciter, $720. 714-635-1037. C

Home, 3-bdrm., 2½ baths, 2,000 sq. ft., 5 yrs. old, 2-ton a/c, elec. bltins, cpts., dps., 3 patios, small dn., N.E. Orange, lease option, $33,500. 213-845-9615. C

Lot, in Arrow Bear, $2,195. 213-674-3953. C

House, 4-bdrm., 1¾ bath, dps., cpts., bltin stove, oven & d/washer, newly painted, 5 min. from Northrop Hawthorne, $31,500. 213-324-8464. C

Rifle, Winchester .30-.30 lever-action, $60. 213-645-1514. C

Honda, 1963, 305 Hawk, reblt. motor, needs batt. & reg., $225. 714-673-5587. C

Bicycle, 3-spd., collapsible, $35. 213-672-7167. C

Bicycle, boy's Sting Ray, 3-spd. stick shift, $40. 213-379-1955. C

Steps, wooden, for mobile home or trailer, solid 2" boards to 24" high & 36" high, $10 set. 213-644-5449. C

Home, 4-bdrm., 2 baths, in Garden Grove, 6 yrs. old, dble. gar., $24,300. 714-537-7279. C

Residential Lot, in Palos Verdes Estates, $21,500. 213-541-1226. C

Movie Camera, Brownie, 8 mm, $15. 213-377-4317. C

Tent, 9' x 18' dble. sideroom, o/side alum. frame, fabric floor, carrying cases, $50. 714-847-0956. C

Motorcycle, Triumph, 650 cc T.T. Special, $500. 213-671-3907. C

Clarinet, std. B-flat, Boehm system, $20. 213-676-5101. C

Miscellaneous For Sale

Mag Rims, Riviera, $80. 213-676-5186. C

Guitar, elec., amplifier & case, $75. 213-346-0814. C

Organ, Hammond, Series 100, 2 yrs. old, mahogany finish, $750. 213-326-0316. C

Luggage, 3-pc. set, light blue, $30. 213-675-5963. C

Saddle, western, $45. 213-394-5470. C

Desert Property, 2½ acres, 1 mile from proposed lake & sportsman's center, near Twenty-Nine Palms, $2,000. 213-677-3471. C

Telescope, 304 power, Tasco, $150. 213-375-5610. C

Ski Boat, 15' Power Cat w/2 recently reblt. Johnson 35 h.p. engs., complete w/all access., $1,150. 213-340-3005. C

Surfboard, Weber, 9' long, $35. 213-374-6162. C

Rear Seat for Jeep Wagoneer station wagon, $30. 213-581-0863. C

Home, 4-bdrm., 2 baths, lge. fenced yd., 2-car gar., newly repainted inside & out, near schools & Garden Grove Fwy., low dn., $21,995. 213-581-5208. C

Travel Trailer, Santa Fe, self-contained, sleeps 4, $400. 213-398-5280. C

Shoe Skates, ladies', white, toe stops, $20. 213-370-3132. C

Auto Top Carrier, $20. 213-833-7253. C

Yamaha, 250 cc, eng. completely rebit., $325. 213-836-4340. C

Apt. Bldg., 5-unit, 3 yrs. old, cpts., dps., bltins, marble pullmans, forced air heat, $59,000. 213-676-5532. C

Guitar, St. George, acoustical, w/Kay amplifier, 18 mos. old, $35. 213-248-4557. C

Camper, fits Chev. step-side truck, 8', sleeps 4, $100. 213-663-4425. C

Tape Recorder, Concertone broadcast, preamp-mixers, 4-head stereo w/access. & manual, $225. 714-827-4097. C

Lot, residential, in California City, near elementary school, $400 dn., easy terms, $4,000. 213-377-7156. C

Tape Recorder, Wollensak T-1500 mono., 2-spd., portable, 40-15,000 c.p.s., $75. 213-789-8536. C

Surfboard, 9'6" Weber, Iggy signature model, $35. 213-676-4050. C

Surfboard, 9'10" Bing Nuuhiwa Noserider, $85. 213-545-6313. C

House, 3-bdrm., 2 baths, cpts., dps., sprinklers, bkfst. nook, close to Northrop, $24,900. 213-321-1655. C

Camper, 8', homemade, rugged, insulated wood const., half-cabover, butane tank, & stove, $175. 213-360-4995. C

Transmission, 1955-1957 Ford, 3-spd. w/3-spd. Hurst linkage, & set of G heads w/custom valve covers, $50. 213-323-5756. C

House, 3-bdrm., covered patio, new tiled kitchen & bathroom, 2 min. from Norair Haw., $24,750. 213-679-7058. C

TV, 24" Packard Bell, b&w, French provincial model, wired remote control, new tubes, 8 yrs. old, $100. 213-377-6458. C

House, 2-bdrm., dble. detached gar., 50'x150 R-2, fenced lot, 3 miles from Norair Haw., $17,500. 213-324-5422. C

House, 3-bdrm., 1¾ bath, deluxe bltins, cpts., dps., fenced yd., G.I., FHA or 20% dn. & finance balance at 6%, $29,950. 213-675-8829. C

Pool Table, Bumper, cues, balls & rack. $175. 213-370-2742. C

Sailboat, Cal-20, complete, $2,300. 213-375-4891. C

Ski Boat, 12'6", fiberglass o/wood, 40 h.p. Mercury eng., elec. start, $400. 714-828-8439. C

Gown, aqua blue, floor length, lace empire top, chiffon o/taffeta skirt, pleated, elbow sheer sleeves, size 7/8, $15. 213-755-7255. C

Bowling Balls, 3, drilled for children's hands, 12 lbs. ea., case, $5 ea. 213-325-3452. C

Miscellaneous For Sale

Boat, 14', 35 h.p., elec. starter, trailer, $300. 213-542-2098. C

Travel Trunk or camp locker, $12. 213-676-2162. C

Photo Enlarger Eclipse, w/tanks, trays, easels, $35. 213-789-5791. C

Swimming Pool, Doughboy, 15'x48", ladder & vacuum cleaner, $75. 213-372-9752. C

Home, 5-bdrm., 2-story, 2 full baths, bltin kitchen, fireplace, fenced yd., cpts., dps., 20 min. from Norair, $33,500. 213-632-3623. C

Drill, ¼", Skil model 596-5, reversible, variable speed w/adjusting knob, $24.50. Box 1302. C

House, 3-bdrm., 1½ baths, 63x135 lot, 16x35 pool, separate 2-car gar., $28,950. 213-754-7861. C

Dust Cover, walnut base, hinged, for Miracord 50H or 40H record changer, $17. 213-379-6983. C

Guitar, Gretch Country Gentleman, $495. 213-375-4448. C

Silk Screen, frame, paint, $5. Box 1303. C

Trailer Hitch for Corvair, chrome plated, $10. 213-679-2041. C

Mini-Bike, 3 h.p. Taco, $105. 213-291-0025. C

Home, 4-bdrm., bltins, cpts., dps., fireplace, close to schools & shopping, terms, $37,950. 213-375-7202. C

House, 3-bdrm., 2 baths, h/wood floors, cpts., dps., bltins, near P.V., $27,000. Box 1304. C

Engine for 1962 Sunbeam Alpine w/4-spd. trans., o/drive & rearend w/wire whl. hubs, $150. 213-673-0859. C

House, on corner, 4-bdrm., den, fenced yd., fruit trees, patio, lge. U-shaped walk-in closet, 10 min. to Northrop, will G.I., $32,-000. 213-756-4702. C

Motorcycle Tires & Tubes, 2, 2.50x18, used less than 200 miles, $14. 213-675-3884. C

Telescope, 4½" reflector w/3 eyepieces & mahogany tripod, $75. 714-962-1805. C

Wanted to Buy

Ford, Econoline, VW van or bus, or Chev. van in good condition. 213-371-9925. D

Crib, white w/canopy in good condition. 213-326-6195. D

Rifle, Winchester 32 Special, model 94. 213-323-4257. D

Table Saw, 8" or 10", in good condition & reasonable. 213-326-6793. D

Station Wagon, 1964-65 Classic Rambler, auto. trans. 714-968-1539. D

Want to buy Honda, 300 Scrambler, 1965 1967 or have 160 Scrambler for trade. 213-328-7048. D

Vegetable Juicer, prefer Champion brand, must be capable of continuous operation w/out emptying pulp. 213-329-1018. D

Bicycle, ladies', must be in good condition. 213-774-2502. D

Tent, 10x12, in good condition. 714-847-7735. D

Volkswagen, 1956 or 67 Squareback, cash, no trade. 213-375-2869. D

Slide Rule, reasonable price. 213-679-1366. D

Free (To Be Given Away)

Pups, mixed springer spaniel, black & white. 213-676-4251. F

Kittens, 5 wk. old. 213-371-2381. F

Kittens, 4, long haired, born at Easter time. 213-377-1094. F

Rentals Offered

Home, new, Lake Arrowhead, 3-bdrms., rumpus rm., 2 baths, sleep 10, 2 families O.K., $24 night, $150 wk. 213-476-1842. G

Apt, executive, 2-bdrm., 2½ baths, 1,400 sq. ft., near Inglewood, $200 mo. 213-670-6084. G

Rides and Riders

Rides Wanted

8 a.m. — 4:45 p.m.

Palos Verdes to Santa Monica, Palos Verdes. Occasional one way ride. Judy Rittscher, Nort. P. V. ext. 375, 213-375-8434.

Rentals Offered

Cabins, Lake Gregory & Crestline, sleep 6, make reservations now, $25 w/ends; $60 wk. 213-391-2040. G

Apt, deluxe 2-bdrm., furn., pool, closed gar., near El Camino, adults, $170. 213-329-5986. G

Camping Trailer, 15', sleeps 5, 3-burner stove, ice box, $35 wk. 714-528-3533. G

Cabin, Lake Arrowhead, north shore, 200 feet from lake, view, $100 wk. 213-375-2255. G

Studio Apt, exec. type, 3-bdrm., in Torrance, all elec. bltins, 2 gars., pvt. patio, cpts., dps., ready for occupancy, no pets, 1 yr. lease, $275 mo. 213-326-4944. G

House, 2-bdrm., stucco, cpts., dps., gar., enc. yard, $145 mo. 213-532-4566. G

Cottage, Ocean Beach, San Diego, near Mission Bay, $65 wk. 714-826-2007. G

Apt, 1-bdrm., unfurn., utilities paid, adults, $90. 213-675-6285, 213-676-2501. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $50-$90 wk. 213-754-5288. G

Bachelor Apt, furn., upstairs, for 1 person, $75. 213-676-5921. G

Child Care

Child care offered, my home, evening shift preferred, full time, references can be furnished, Hawthorne Inglewood area. 213-679-1392. I

Lost

Tie Pin, Roman copper coin, reward. 213-542-2537. J

Found

Pair prescription glasses, Plant III, approx. June 1, contact clerk on ext. 5131, 5134. K

Personals

Your kind expressions of sympathy, cards & flowers for our late uncle, Elmer G. Smith, are gratefully acknowledged & deeply appreciated. BARBARA & JIM ENZOR, ASA & GEORGE SMITH. L

House Painting wanted on Saturdays, interior & exterior. 213-329-9303. L

Mr. & Mrs. Carl Agelotty wish to thank his fellow workers in Dept. 5754 & friends at Northrop for the cards & letters of encouragement during the time of his operation. He is making a rapid recovery & will be back soon. L

To my friends at Northrop for their kind expressions of sympathy in the recent loss of my wife, Loretta Miller. RICHARD MILLER, RICK, FRANK & JIM. L

Sincere thanks to my friends & former coworkers of my mother, Florence Lyon, for their kindness & expressions of sympathy during her illness & death. SALLY VALENCIA. L

Please accept our sincere gratitude & appreciation for the sympathy, acts of consideration & flowers received during the illness & death of our beloved Ralph Turner. NORM TURNER & FAMILY. L

Roommate, female, wanted to share 2-bdrm. apt. w/Northrop employee, preferably near Beverly Hills office. 213-370-0312. L

For Sale or Trade

Gun, Colt, 22 mag. w/extra 22 L.R. cylinder & holster, $60 or trade for 12 ga. pump or auto. 714-639-1629. M

Sander, portable, air-powered Sundstrand, & grease gun, Alemite, $60 or trade for good quality bolt action .22 target rifle. Box 1305. M

ALAN C. MORGAN (center), Corporate vice president of Industrial Relations, accepts Good Neighbor plaque recognizing Northrop Corporation's support of six financial institutions in the south-central Los Angeles community. The award was presented by A. E. Hampton (left), president of the Family Savings & Loan Assn., and Dale C. Roussell (right), executive vice president of Robinsons' Research and Enterprises. Mr. Hampton and Mr. Roussell are instrumental in the Good Neighbor Program with the over-all goal of assisting rehabilitation of the Watts area.

Counselors In Program At Anaheim

Nortronics Anaheim has participated in a program of vocational guidance in cooperation with California State College at Fullerton.

In a week-long workshop concluded last Friday, the division was host to counselors John Anderson of El Modena High School and Alfred Finlayson of Villa Park High School.

The guests participated in orientation, discussions and inspections of virtually every department including Engineering, Marketing, Manufacturing and Facilities.

The objective was to give the counselors a first-hand insight into the manufacturing and operating techniques of a typical electronics and aerospace firm so that they might be better equipped to counsel students interested in these areas of future employment.

CONTRACT ADMINISTRATION as a career is discussed by Bob Danelson (left), supervisor of Contract Administration at Nortronics. He speaks with John Anderson (standing) and Alfred Finlayson (center), who visited Mr. Danelson from their counseling jobs at El Modena High School and Villa Park High School, respectively. They came to Nortronics last week to learn what paths students should follow on the way to specific vocations represented by positions at Nortronics. Bill Turner (right) of the Anaheim Personnel department participated in the briefings.

NORVIPS

(Continued from page 1)

Under terms of the contract Northrop will provide 350 NORVIPS units and 354 CIPR units, test sets, CIPR playback equipment and the necessary sensor conversion data.

Operational tests have shown that it takes approximately ½-second for the pilot or crew to respond to a NORVIPS warning, compared to an average of 18 seconds when only warning lights are used.

Each repeatable message from NORVIPS can be 15 seconds in length, although most are limited to as few words as possible. NORVIPS also has builtin priority capability. If more than one malfunction exists it will immediately select the condition which requires the most urgent response. It will interrupt a message during transmittal, if a more critical problem occurs.

Al Vogel is manager of the ECOM NORVIPS program with R. E. Miller serving the key marketing function.

Round of 70 Wins Tourney

Results are in from two Nortronics golf tournaments.

Forty-four Hawthorne golfers competed at Mountain View Country Club, while 28 golfers from Anaheim met at the Mission Viejo course. All scores are net.

In the Hawthorne tourney, Russ Munsen shot the day's best round of 70, capturing first flight honors over Ed Stone (76) and Dave Rice (79). Flight two went to Dana Vigo who fired a 70. Cliff Getz and Bob O'Toole were close behind with 72 and 73, respectively. In the third flight, the 72 of Dan Kaufman topped Bill Morlan's 74 and the 76 of Tony Piccirello.

Best game gross was Verg Wilson's 84.

Meanwhile, Anaheim golfers participated in two flights of medal play.

Vitamins Available

Substantial savings are available at Nortronics Hawthorne in the purchase of both daily maintenance and therapeutic vitamins. The vitamins are provided to Nortronics employees by leading manufacturers at savings up to 40 per cent, according to Harry Clark of Personnel Services.

Profits from the sale of these vitamins go directly into the NRC treasury and are used to finance employee functions such as the summer picnic and Christmas party.

A $500 AWARD is given to Ann Howell (right) for her most recent suggestion which will save Nortronics time and money. Ross Miller (left), vice president and Navigation department manager, presented the check to Mrs. Howell on behalf of the division and the Suggestion Awards program administered by Larry King (center). Mrs. Howell has won three awards and $602 this year.

Employees' Ideas Merit $1,501 During June

Seventeen Nortronics employees have received payments totaling $1,501 as a result of the acceptance of their better ideas which were submitted to the suggestion awards program.

One of these, Ann Howell, of the C-5 Manufacturing Operations unit in Hawthorne, was June's big winner. Her check was for $500. Mrs. Howell had already collected $102 in two previous awards this year.

Her latest idea was for the design of a special soldering pencil tip which reaches around corners and allows replacement of otherwise inaccessible "flatpacks" and other components without removing the entire "stick." Mrs. Howell has been with Northrop for more than 16 years.

Eleven more winners were from Hawthorne and the remaining five were from Anaheim.

Vern Rand, of Page Court Mechanical Maintenance, suggested a reversing switch to clear chip conveyors, and received $201. Earl Simpson, of Hawthorne Shipping, eliminated a supplemental operation sheet with his suggestion, and was paid $166. Jack Flanagan, of the Inspection unit, avoided the use of a complex inspection tool by devising a six-way inspection fixture which does the work in less time. His award brought $146.

Other awards ranged from $10 to $83.

COMPENSATION GROUP ELECTS JERRY WAJDA

The chief of Compensation and Development at Nortronics, Jerry Wajda, was elected secretary-treasurer of the American Compensation Association's Western Region at a recent conference in Los Angeles.

Mr. Wajda

Mr. Wajda has served as secretary - treasurer pro tem during the formulation of the western region. He will function in his newly elected office for one year.

July 20 Dance Set

A Bavarian dance has been scheduled by the NRC in Anaheim for July 20 at the clubhouse in Fullerton.

Dancing at the "Hops Hop" will be from 9 p.m. to 1 a.m. with music by The Tune Launchers. Admission is $2 per person. Refreshments will be available.

A limited number of tickets is available from the Personnel Activities desk in Y-1, or from various NRC representatives throughout the plant and offices.

Three Earn 20-Year Service Pins

Two Nortronics employees in Hawthorne and another in Anaheim will receive recognition awards this month for 20 years of service with Northrop.

The Hawthorne employees are G. A. Nelson of the Mariner '69 Change Control group at NSL, and Robert Vandeveer of the Technical Liaison section.

Twenty-three others will complete 15 years' service this month. They are Martin Allison, Lyle Batchman, Theodore Cheney, Earl Ellis, jr., Seferina Garcia, Bernice Gately, Blanche Klasse, Charles McLachlan, Fola Nelson, Delores O'Kon, William Ross and Roderick Wheeler, jr., all of Anaheim.

Fifteen year awards at Hawthorne go to Vergle Case, Cecilia Ceniceros, Thelma Chambers, Robert Gillingham, Jack Howard, Anthony Jerzyk and Mary Searle; and to June Block, Merl Fairchild, Glen Garrett and William Jackson at Palos Verdes.

Cynthia Cherbak Receives $1,000 JA Scholarship

The 18-year-old daughter of Nortronics' Vic Cherbak has received a $1,000 Junior Achievement scholarship.

Miss Cherbak

Cynthia Cherbak, whose father is assistant to the vice president and manager of the Northrop Systems Laboratory in Palos Verdes, will apply the scholarship toward her college education this fall. She has been accepted by Stanford University at Palo Alto, where she will major in economics and education.

In her senior year at Hawthorne High School, Miss Cherbak was president of the associated student body of 2,450. She is a graduate of the Toastmasters' Youth Leadership program, and won a $500 achievement award for fine arts from the Bank of America.

Earlier, Miss Cherbak was named one of her school's two "Outstanding Teenagers of America."

NEW PRESIDENT—Marguerite Dougherty (left) of Nortronics Hawthorne, receives president's gavel from Lois Paris of Norair, at annual installation ceremonies held by Northrop Smoothsayers Toastmistress Club.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 14 | July 17, 1968

NSL Builds Biosatellite Components

Nortronics is playing an important role in the forthcoming 30-day biosatellite primate mission scheduled to be launched next March by the National Aeronautics and Space Administration, according to Bill Armstrong, director of Space Systems at Nortronics.

The satellite will be launched from Cape Kennedy and returned by aerial recovery methods near Hawaii.

Nortronics, under subcontract to the University of California at Los Angeles, is providing the integrated electronic equipment assemblies which support the basic experiment. These assemblies, which will be flown with the biosatellite spacecraft, also contribute to the developmental training of the primate concerned with this monkey-in-space flight.

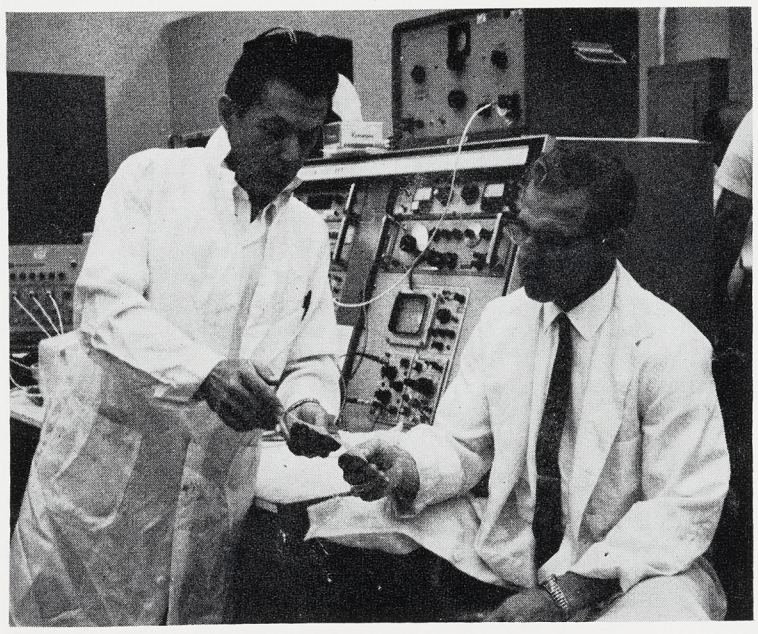
Actually, more than 40 Macaca nemistrina monkeys have already been adapted to the capsule/couch environment and are undergoing selection procedures for a 30-day flight simulation test. The specific flight monkey will be selected just prior to launch from an experimental colony which then will number approximately 80.

All monkeys come to Dr. W. Ross Adey's Brain Research group at UCLA as untrained specimens. They are being taught to perform certain memory-span tasks which the flight monkey will perform while in the 30-day orbit.

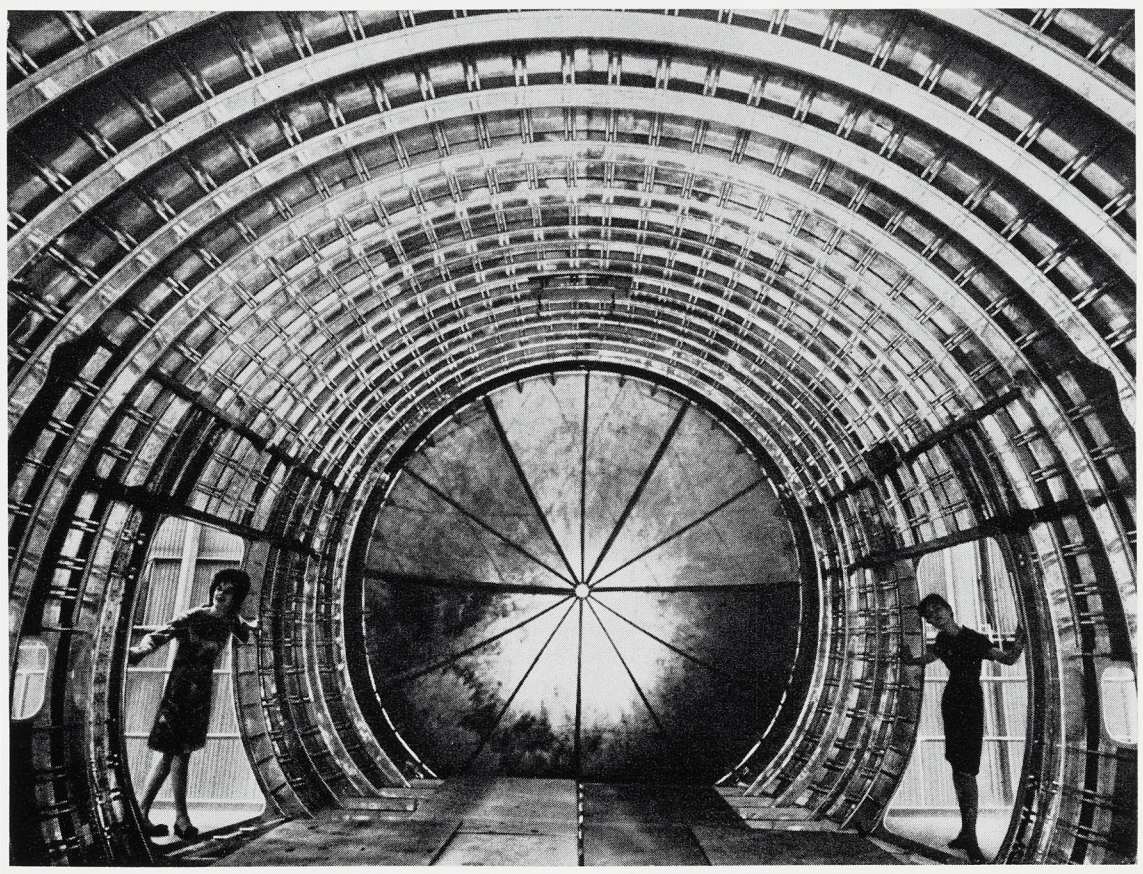
In one experiment, the monkey's memory during flight will be compared with his previously recorded earth memory. Conclusions drawn from this comparison will be used to help determine what effect prolonged weightlessness in space might have on the mind, memory and focused attention of man.

Chet Wetzel, Nortronics program manager, explained that, in addition to the electronic behavi-

(See BIOSATELLITE, page 6)



A MONKEY'S MEMORY will be tested by this Integrated Electrical Equipment Assemblies unit developed at Northrop Systems Laboratories by Nortronics in support of the biosatellite mission to put a lone primate in orbit next March. Lawrence Dietz, NSL cognizant engineer (right), and Richard Petros, NSL test technician, check the latest output of the monkey behavioral panel.



NORTRONICS - PRODUCED STRINGERS stand out, running the length of this section of a Boeing 747 jetliner under assembly at The Boeing Company's Everett, Washington, facility. First production 747 has been mated and is slated for rollout this fall, with first flight planned before the end of the year. Additional pictures on page 3.

NSL Receives Contract In Space Flight Program

A new contract valued at more than one-half million dollars has been awarded to Northrop Systems Laboratories by the National Aeronautics and Space Administration (NASA) to build and test a non-flight demonstration prototype for an orbiting primate experiment.

Research on the orbiting primate experiment began in 1967 to provide a better understanding of the physiological changes anticipated in long manned flights due to weightlessness.

The new contract is for an experiment which will investigate the feasibility of building a spacecraft which would be programmed for a flight of longer duration than the current 30-day biosatellite program. The spacecraft will assess the effects of weightlessness on a relatively high order mammal. NASA is considering the placing of two unrestrained rhesus monkeys in orbit for an extended period, then returning them to earth for detailed examinations.

In this experiment, the aim will be to isolate weightlessness as a variable while maintaining all other factors as nearly normal as possible.

The orbiting primate experiment is part of NASA's Human Factors Systems program to provide the technology required to support man during extended periods in space.

21 Employees Receive Long Service Awards

Twenty-one Nortronics employees will receive service awards this month.

Carl Engstrand completed 25 years with Northrop last week. He's a manufacturing associate who handles scheduling for the C-5 FCE/AGE assembly subunit at Hawthorne. Mr. Engstrand joined Northrop during World War II and worked as an electrical leadman on the P-61 assembly line.

Mr. Engstrand

Charles Berdan and Louis Perry both began their Northrop employment 20 years ago. Mr. Berdan is supervisor of Accounts

(See SERVICE, page 6)

NEW FEDERAL TAX RATES IN EFFECT

Paychecks distributed to Northrop personnel after July 14 will reflect the new federal income tax surcharge of 10 per cent.

Most employees will find their weekly withholding tax deduction increased by approximately 10 per cent, but this may vary in individual cases.

The new tax law is retroactive to April 1. Since Northrop did not start deductions under the new rate until July 14, some employees will find they are underwithheld for the total year. Special forms, available from department clerks, can be used to authorize additional deductions to offset this situation.

747 Stringer Production Moves Ahead

Nortronics' stringer manufacturing facility at Anaheim is now moving ahead at a brisk pace having established a production capability of eight and one-half Boeing 747 shipsets a month.

This is the word from Nick Niccole, chief of the Stringer Production group.

Units delivered to Norair for use in the 747 Program now exceed 13,000. They would stretch over 30 miles if laid end to end. Nineteen shipsets have been delivered to date.

Stringers are the longitudinally placed members of the fuselage skeleton which support the covering skin and join the bulkhead rings and sections of the aircraft's main body.

The recent inclusion of the paint booth into the monorail system, and the installation of heat treat and quick chill tanks, have helped make the Anaheim Facility "the world's only completely integrated aircraft stringer manufacturing facility," according to Ray deLubine, administrator of Manufacturing-Marketing. Also, Northrop is the first aircraft manufacturer to employ the "car wash" technique on its production line.

An amazingly low rejection rate is attributed to careful handling and particular attention to detail, and the fact each stringer receives 100 per cent black light inspection and subsequent individual certification by Quality Control, according to R. F. "Rip" Stidham, supervisor of Stringer Fabrication Inspection.

This almost negligible rejection rate is even more significant in view of the fact there are 703 stringers in a single shipset of 747 assemblies, that range in finished

(See 747 STRINGERS, page 6)

British Polaris Liaison Finds Duties Interesting

For the past two years Tom Kelecy is one Nortronics employee who has been heard from but not seen around Southern California. As a technical field representative assigned to Doug Leavenworth's Product Support group, Mr. Kelecy has been serving Nortronics at Birkenhead, England, near Liverpool.

Mr. Kelecy

He has been Nortronics' liaison to the United Kingdom Polaris submarine fleet composed of Her Majesty's Ships Renown, Revenge, Resolution and Repulse.

Now—after several weeks back in Anaheim for TEAMS re-orientation—Mr. Kelecy is off again. He reported this week to the U.S. Naval Shipyards at Charleston, South Carolina. Mr. Kelcy is there to oversee the refurbishment of the Nortronics MK 7 equipment aboard both the USS Holland, a Polaris tender, and the James Monroe, a Polaris submarine. The two ships will soon have modified MTRE and DATICO equipment installed.

In his 17 years with Northrop, Mr. Kelecy has served as a field engineer to almost every overseas and home port area where Nortronics has representation. But England was "our most interesting experience yet." For the equivalent of $130 a month the Kelecy family — including five children aged 6 to 12 years — lived in a four-bedroom ranch style bungalow on two and one-half acres in the suburbs.

Though there was plenty of hot water, the Kelecys found their most difficult adjustment to be "the lack of sufficient heating."

Mr. Kelecy's fondest memories of his first encounter with the British Isles are of the Fifteenth Century castles in Wales.

NORTHROP NEWSMAKERS

Glenn R. Lord, vice president-Marketing, has been nominated as an Executive Committee member of the Los Angeles chapter of the National Security Industrial Association.

The association is a non-profit organization which acts as a liaison between industry and the military. Its mission is to maintain a strong military posture for the U.S. through cooperation between industry and the military.

* * *

Robert M. Elder has been named assistant to the president for Aeronautical Systems at Northrop Corporation.

His appointment was announced by Thomas V. Jones, Northrop president. Mr. Elder will coordinate division and customer relationships with the president's office in the aircraft segment of Northrop's business.

Mr. Elder

Until his new assignment, Mr. Elder was a member of the Customer Relations organization at Corporate headquarters. Before that he was director of Flight Operations at Norair. His work has included numerous U.S. and overseas assignments in the test and evaluation of tactical aircraft configurations.

Before joining Northrop in 1963, Mr. Elder completed a distinguished career with the U.S. Navy. He commanded two Navy fighter squadrons, an air group, and the attack carrier USS Coral Sea.

As a Navy test pilot, he had three tours of duty at the Naval Air Test Center, Patuxent River, Maryland, including one as director of Flight Test. He retired with the rank of captain after 25 years' service.

He was vice president of the Society of Experimental Test Pilots.

* * *

Richard R. Nolan, Northrop's senior vice president-Manufacturing and Administration, has returned from Norwood, Massachusetts, and a visit with Nortronics Precision Products Department personnel.

Mr. Nolan was briefed on PPD products and market forecasts by **David N. Ferguson,** Nortronics vice president and manager of PPD. He was shown the Dual Axis Rate Transducer (DART) product line, gas-bearing fabrication, rate gyros and new product developments.

Conducting the tour were Mr. Ferguson and **Robert Schlenzing,** PPD's director of Manufacturing.

* * *

Jay Novak, Northrop Graphics director, discussed "Words and Images" at the 15th International Technical Communications Conference in Los Angeles. The topic of the conference was "New Developments in Technical Communications."

* * *

William McDonald, manager of the Engineering Services Department of the Military Division of The Hallicrafters Company, has been appointed manager of a newly established Southeastern Regional office.

The increase in military division business has necessitated the expansion of Marketing Department activities with a regional office in Norfolk, Virginia, according to Lester R. Grohe, vice president-Military Division.

Mr. McDonald will represent Hallicrafters at key military installations in Virginia and in Florida. Hallicrafters is a subsidiary of Northrop Corporation.

Gilbert Peters joined Hallicrafters as manager, Engineering Services Department, replacing Mr. McDonald.

Before joining Nortronics in 1964, Mr. Peters was general manager of the RCA Data Systems Center at Bethesda, Maryland.

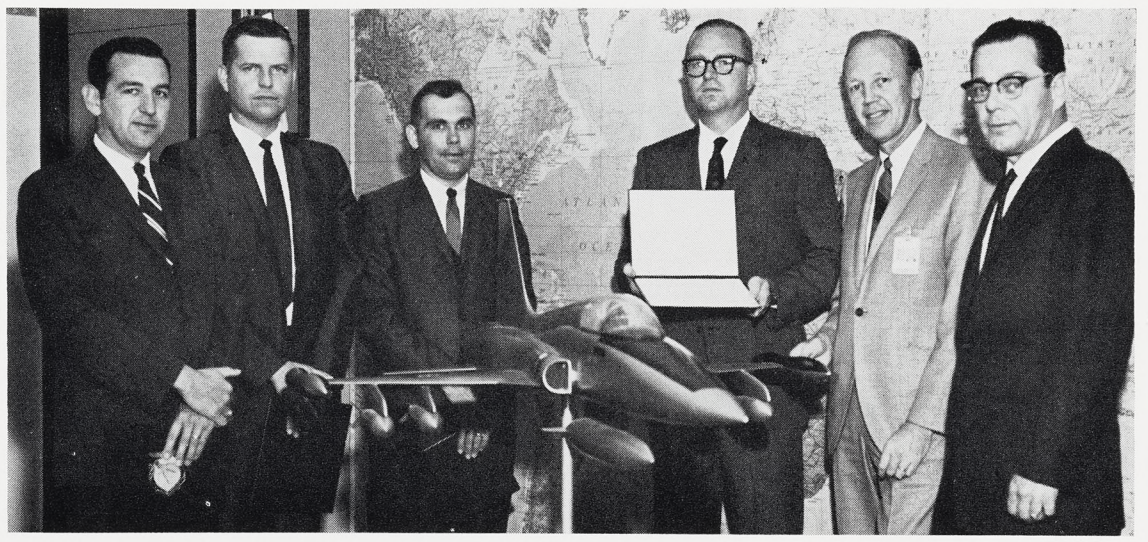
* * *

David M. Badger, member of the Technical Management at Norair, has been appointed treasurer of the advisory council of the Los Angeles section of the American Institute of Aeronautics and Astronautics.

"Some people put themselves above politics . . . In the name of all that's American, how can any good citizen feel superior to politics? We achieved our independence by politics. We freed the slaves by politics. We are taxed by politics. Our businesses flourish or wither by politics."

—Charles Edison

PPD—Richard R. Nolan (second from left), Northrop senior vice president—Manufacturing and Administration, looks over production items at Precision Products Department. With him are (from left) David N. Ferguson, Nortronics vice president and PPD manager; L. P. Longtin, Manufacturing general foreman; and Robert Schlenzing, director of Manufacturing.



AIR FORCE OFFICERS completing a 10-month assignment at Northrop as part of the Education With Industry program are (from left), Captains James E. Drumgool, Carlos L. Naumann, George W. Mickey and Robert W. Stewart. Each received a certificate of completion issued by the Air Force Institute of Technology and presented by Gaylord Anderson (light suit), manager of Norair Product Support. Harry Blocher (right), supervisor of Customer Training at Norair, coordinated the program.

SIX MILES APART

Father, Son Serve In South Vietnam

Odds makers would have a field day with the possibility of a civilian father and a military son serving simultaneously in Vietnam, to say nothing of being based only six miles apart.

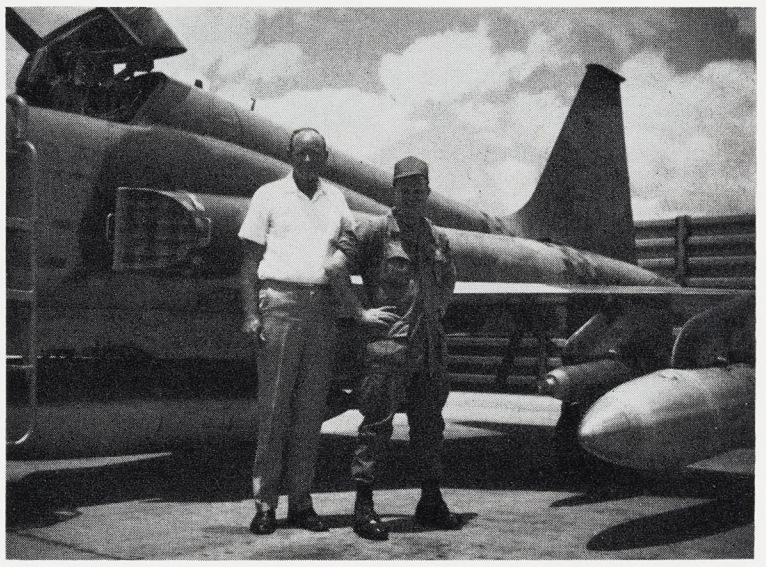
Yet it has happened to George Wilcox, a Northrop technical representative, and his stepson, Stanley Skidmore, an Army Specialist 4. They reported to Vietnam in April and February, respectively.

Mr. Wilcox serves the Vietnamese Air Force unit flying Northrop F-5 fighters from Bien Hoa Air Base. SP/4 Skidmore is a jeep driver and gunner with a security patrol at Long Binh Army Post.

"We get together almost every Sunday. It sure makes those off duty hours go by in a hurry," Mr. Wilcox reports. "Not every one over here is so fortunate."

Mr. Wilcox reports his son drives a vehicle that is a "regular arsenal on wheels" complete with machine gun, automatic rifle, shot gun, a grenade launcher and other weapons. Sometimes a guard dog and handler go along.

Mr. Wilcox is a veteran of more than 25 years of aircraft maintenance and supply work with the Air Force and Air National Guard. His service dates back to World War II and includes time with Military Assistance Program F-5 units in Norway and Ethiopia. He retired from the Air Force in January 1967 and joined Northrop shortly thereafter for tech rep training. Vietnam is his first overseas duty assignment.



FARAWAY PLACES—George Wilcox, Norair tech rep, and his stepson, Army SP/4 Stanley Skidmore, are stationed just a few miles apart in South Vietnam.

WHY TWO PARTIES?

Party System Limits Government Power

(Editor's Note: Following is the second in a series of articles designed to acquaint Northrop personnel with America's two-party political system; to encourage everyone to support his party and candidates, and then vote in the November elections.)

One of the obvious reasons for having two parties in our political system is that the average American—from contrariness if nothing else—likes to be for something and against something else.

Another reason is that most of us like to belong to a group of people who, more or less, share our views about our nation and the world.

However, it is important to remember that ours is a two—not a multiple—party system despite the dozens of minor parties which have emerged and vanished during the history of our nation.

The average person often characterizes the Republicans as the party of the rich and the Democrats as those who uphold the causes of the poor or common man. There is some root to this going back to the original Hamilton-Jefferson conflict in George Washington's cabinet. Hamilton built the Federalist party on the theory that the first function of government should be to encourage commerce and industry. Jefferson's opposition party was just that — opposition to Hamilton's views — and based upon an alliance of the Tammany Society of New York City and southern Virginia planters.

Although the shadow of those differences still exists, today's Democrats recognize that strong commerce and industry are vital to the nation, and Republicans admit that the poor people and laboring classes must receive due consideration.

The function of the winning party is to behave in such a manner that it will remain in power.

The function of the losers is to find enough flaws in the administration structure to become winners at the next election.

A strong opposition party is the greatest assurance we have that our government will be conducted in a wise and prudent manner without regard for special privilege to special factions.

Although we fought the Revolution to break our ties with Great Britain, the fact remains that our political system is rooted in the British system. It goes back to the day when men finally won the right to voice criticism of their government without being hanged for treason.

Continental Europeans, who tend to associate a party with a cause, thereby have a multiple party system, and fail to understand ours where there seems often to be no real difference between the ideological or social position of Democrats and Republicans.

Above all, the thing which primarily distinguishes our parties is whether they happen to be in office, or in opposition.

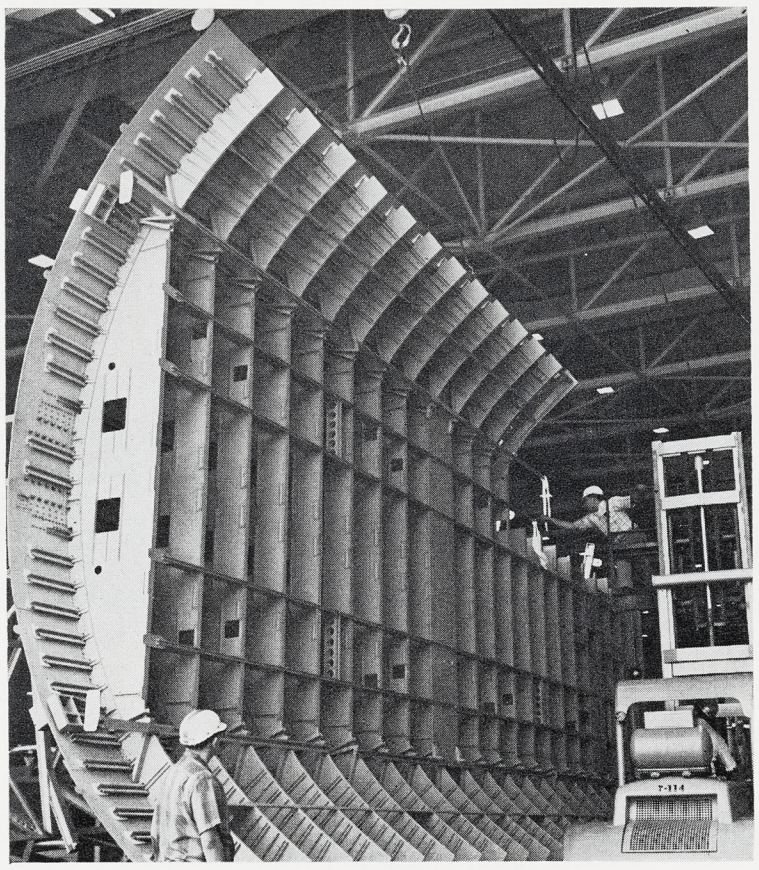
Some of the parties which have evolved and then faded away include the Greenbacks, Populists, Single Taxers, Prohibitionists, Know Nothings, Vegetarians, Progressives, Free Soilers, Dixiecrats, Anti-Masons, Socialists and others.

Both of our main parties have shifted position many times on many issues and undoubtedly will continue to do so when shifting social currents dictate.

It becomes obvious that the primary purpose of the political party organization is not to promote a special cause, or woo a special segment of the population, but to win elections and remain in office.

(NEXT: HOW THE PARTY FUNCTIONS)

The First Boeing 747 Jetliner Takes Shape



Norair Readies An Assembly

The Boeing Company has completed mating of all major sections of the nation's newest and largest commercial jetliner—the Boeing 747.

Northrop Corporation's contributions to the 747 Program are extensive.

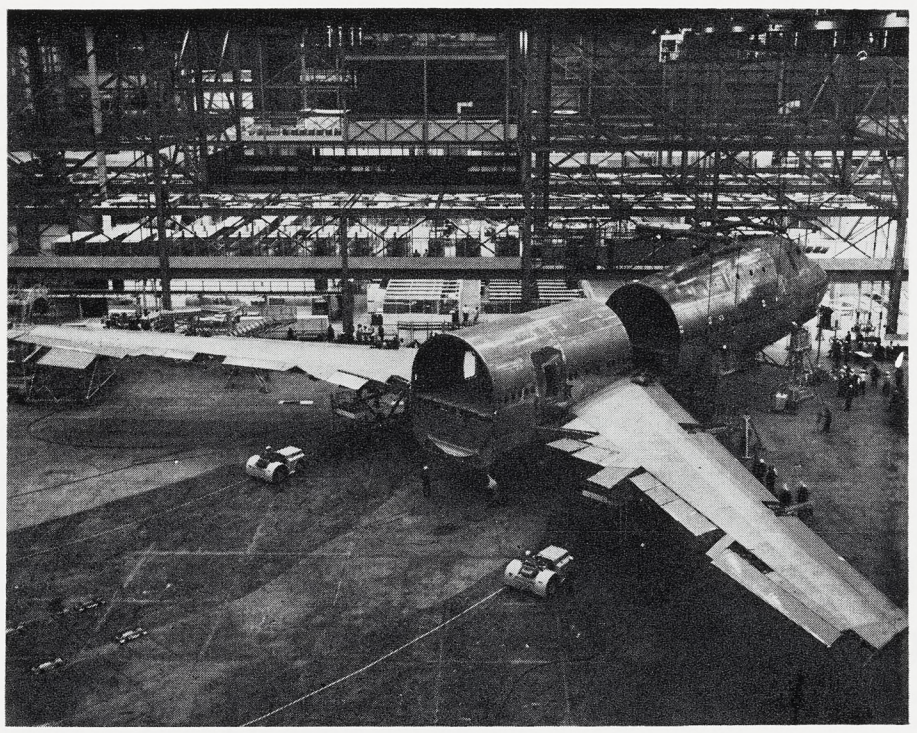
Northrop Norair designed and is building the 153-foot-long main passenger compartment in three major segments known as Sections 42, 44 and 46.

Nortronics Anaheim fabricates stringers, the longitudinally placed members of the fuselage skeleton.

Northrop Ventura is building fiberglass wing - to - body fairings for the 747.

Northrop Architectural Systems produces a special sandwich-type flooring for use in passenger and cargo compartments.

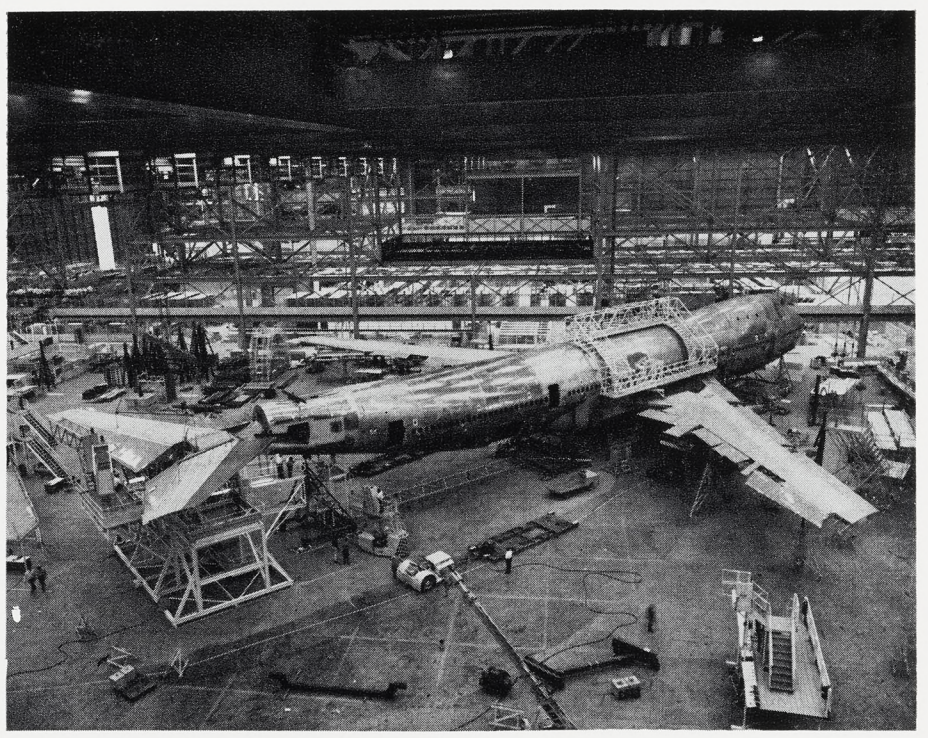
Section 42 Mated To Nose



Section 44 In Place Over Wings

Section 46 Joined To Section 48

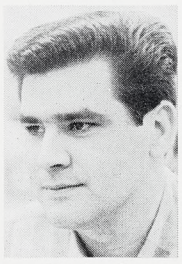
Three Major Sections Ready For Mating



Horizontal Tail Assembly Next In Line

WHAT DO YOU THINK?

Which Qualities Do You Seek In a Presidential Candidate?



Mr. Leeds

Earl Leeds, multilith operator, Ventura:

I believe he should be a representative of the people. He should see if anything can be done about the war in Vietnam, and work to solve the race problem. He should be a person of decision, up-to-date on all issues in the United States and overseas.

Mrs. Woods

Louise Woods, secretary, Ventura:

Money. He can't afford to campaign unless he is rich; can't be president unless he is rich. We need diplomacy, an almost dead art, now more than we need a military background. The old school of diplomacy should be re-born.

Mr. Rusling

Con Rusling, Payroll, Nortronics Anaheim:

The biggest quality would be a sense of responsibility. He should have a knowledge of political workings. He should be a politician; otherwise he won't be elected. He should have experience in all fields—especially in legislative and administrative functions.

Mrs. Harris

Beth Harris, mail clerk, Nortronics Anaheim:

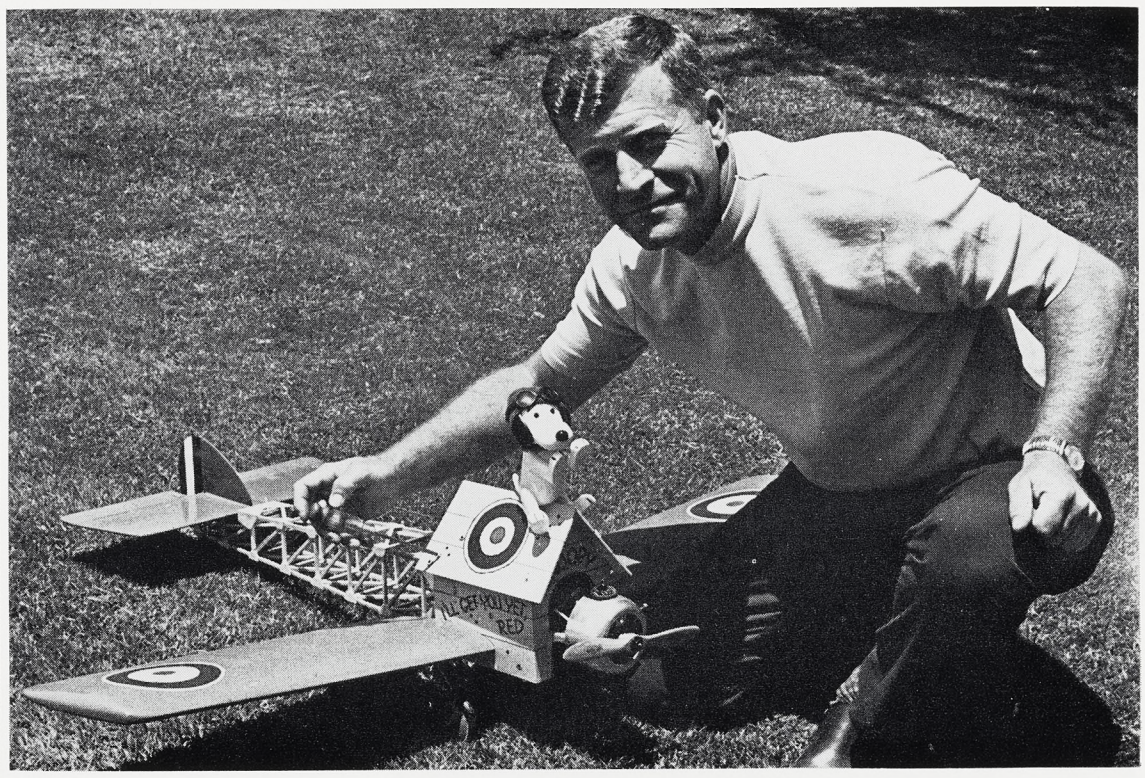
Honesty. Understanding. Straight - forward answers—not evasive. I hate an evasive person. Intelligence. A person who has warmth. I wish one of the candidates would have all of these qualities because not one of them has them all.

Mr. Bradley

Lee Bradley, assembler, Electrical Mechanical Development Test, Ventura:

Leadership mainly. The ability to keep the minds of the people on him; to run the country in a democratic way and perform all of his duties well.

WEE BIT O' SCOTLAND sounds forth at Nortronics Palos Verdes during lunch period when William Adams, jr., practices playing his bagpipes. Kilts were added just for photographer.



'RED BARON' BEWARE—Nick Linardos of Norair makes final adjustments on this radio-controlled model airplane, called "Snoopy." Mr. Linardos designed and built the model using his imagination, authentic data and the encouragement of his sons. Photo by Ron McGaffin.

WITH SOPWITH MODEL

Linardos Champions 'Snoopy' Cause

Snoopy, the comics canine, has found a champion in Nick Linardos, a Norair engineering specialist.

As every fan of the Peanuts strip knows, Snoopy is a born loser in his dreams of one day besting the legendary "Red Baron" in aerial combat. But his trusty doghouse, alias a Sopwith Camel, collects more bullet holes than honors.

Mr. Linardos, encouraged by his sons, John, 9, and Jim, 11, reasoned Snoopy could use a little applied advanced aeronautical technology.

So he has designed and built a radio-controlled model airplane, aptly named "Snoopy." It is a masterpiece of balsa, spruce, plywood, plastic and metal that spans the gap between the imaginary and authentic.

The Sopwith Camel was a British fighter of World War I vintage.

Mr. Linardos has copied its engine cowl, wing tips, tail surface and markings. The doghouse, with a helmeted and goggled plastic Snoopy perched atop, is pure comic strip, but remarkably lifelike in every detail.

Liberties were required. Mr. Linardos' "Snoopy" has a single wing, the Sopwith Camel had two. And the fuselage is uncovered. This allows the doghouse to be displayed to its best advantage.

Mr. Linardos altered his original design to allow his creation to be entered in a current Radio Control Modeler magazine design contest.

But the real objective—flight—is still pending. Preliminary flight tests indicate "Snoopy" is underpowered. It will buzz along the runway at 15 mph and lift its tail, but has never been airborne. Work is under way to remedy the problem in the form of increased power and avionics of a lighter weight.

"Snoopy" has caught the fancy of Norair employees who have seen Mr. Linardos working on his design during lunch period. This has led to comments, suggestions and help from many sources.

Mr. Linardos mentions contributions made by John Kokalj, Ralph Seifer, Sheila Ondrasek, Carl Weyl and Ron McGaffin, all of Norair.

"Snoopy, the canine, has some real friends at Norair. 'Snoopy,' the airplane, is just a step away from first flight," Mr. Linardos says. "Maybe someone will come up with a DRI Fokker triplane for the 'Red Baron' and we can have this thing out once and for all."

Bagpiper's Wail Haunts PV Parking Lot at Noon

Above the clatter of typewriters and the hum of voices rises the unexpected wail of a bagpipe each day at Nortronics Palos Verdes.

The music is not meant as a joke or as lunchtime entertainment. Rather, it is the carrying on of an age-old art in an unlikely time and place.

William Adams, jr., a contract cost analyst, plays 45 minutes at lunchtime in the visitors' parking lot, practicing old Scottish ballads. He practices at lunch because he is working for his master's degree and needs evenings for study.

Nevertheless, he manages to get in an hour of drill with the chanter, the flute portion of the bagpipe, each night. This is important, Mr. Adams says, because the finger work required to produce notes is the most difficult part of playing the bagpipes.

The bagpipe consists of the chanter, the bag and the drones, three pipes protruding from the bag which are supported on the piper's shoulder.

The chanter and the drones are made of wood and, in Mr. Adams' instrument, the bag is made of calfskin. Sheepskin, with the wool still on it, is used for the bag in Scotland to keep moisture from freezing inside.

Mr. Adams became interested in the bagpipe when he heard a pipe band at the Seattle World's Fair. Two years ago, he bought a chanter and a year ago he finally began playing the full instrument.

He is a member of the Anderson Highlanders, one of many such bands in Southern California which participates in a regular series of bagpipe competitions.

Not only is Mr. Adams an enthusiastic player, but he is also somewhat of an historian on the tradition of bagpipe playing.

According to him, the bagpipe is the oldest known complex wind instrument in existence. In the western United States, the instrument has always been an oddity; but he says there has been a resurgence of interest in it in the last few years.

Still a novice player, Mr. Adams practices haunting Scottish tunes each noon with the goal of becoming a master player. Though his Scottish ancestors could not understand the time or place, they could certainly understand the music.

Employee's Son Wins Physical Fitness Award

The 14-year-old son of a Nortronics employee has received five award certificates in a recent banquet at La Palma Junior High School in Buena Park.

Frank Algarin, son of Efrain Algarin, a multilith operator in Anaheim Reproduction, was one of five candidates chosen, among a field of 611, to receive the Presidential Physical Fitness Award. The citation and emblem are presented only to those who meet rigid physical fitness and body conditioning standards.

Frank Algarin

Young Frank also is a four-letter athlete. He received letter awards for being: (1) a football quarterback, (2) a baseball shortstop, (3) a low and high hurdler and high jumper in track and (4) a basketball guard. He is a member of the junior varsity in all of these sports.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Sunbeam, 1958 Rapier, r/h, o/drive, $225. 714-827-9356. A

Dune Buggy, roll bars, tow bar, belly plate, turn signals, 6 volt & 12 volt lights for towing, $350. 213-370-6444. A

Renault, 1962 Dauphine Deluxe, 4-dr., $275. 805-495-4304. A

Volkswagen 1300, 1966, $1,400. 213-866-6615. A

Barracuda, 1967, h/top, r/h, w/s/w tires, extras, 4 yrs. left on guarantee, 3-spd. trans., lge. slant 6 eng., $1,775. 213-397-1638. A

Buick, 1963 Riviera, vinyl top, stereo tape, new brakes, $1,500. 213-370-9170. A

Pontiac, 1956 convt., r/h, new top & batt., $175. 213-644-3024. A

Chevrolet, 1956, 4-dr., 283 V-8, $150. 213-370-3132. A

Pickup Truck, 1956 Ford, new chrome, ready for paint, $975. 213-429-1114. A

Porsche, 1967, 912, 5-spd., chrome whls., Radial tires, AM-FM Blaupunkt radio, $4,200. 714-527-1996. A

Volkswagen, 1957 sedan, needs eng. & body work, $175. 213-372-7875. A

Buick, 1963 Skylark, auto., p/s, r/h, $1,050. 213-761-9546. A

Station Wagon, 1957 Ford, $100. 213-327-5747. A

T-Bird, 1960, p/s, p/w, p/b, r/h, 10,000 on reblt. eng., needs radiator & paint, $400. 213-377-5853. A

Chrysler, 1957, Windsor, 4-dr., $100. 213-755-8018. A

Chevrolet, 1959 Impala h/top, 283 eng., auto., r/h, $350. 213-323-1750. A

Ford, 1964 Galaxy, 4-spd., new tires & brakes, $1,300. 213-675-5963. A

Ford, 1930 Model A coupe, restored, $1,500. 714-894-2566. A

Chevelle, 1966, 427, 4-spd., many extras, $2,200. 213-329-5422. A

Volkswagen, 1964, reblt. eng., $975. 213-677-2034. A

Pickup Truck, 1960 Ford, ½-ton, 6 cyl., stick, w/telephone utility bed & ladder rack, $495. 213-370-4315. A

MG Midget, 1965, Michelin tires, radio, $1,200. 213-378-5936. A

Pickup Truck, Chevrolet, 1952, ½-ton, w/camper, $250. 213-371-3409. A

Valiant, 1961, 4-dr., r/h, good tires, $65. 213-323-9887. A

Mustang, 1966, r/h, V-8, stick, a/c, $1,800. 213-968-2856. A

El Camino, 1965, 327 eng., 4-spd. floor shift, r/h, tachometer, $1,500. 213-644-4855. A

Mustang, 1966, 2+2, 4-spd., big eng., $2,000. 213-377-7670. A

Camper Van, Chevrolet, 1967, V-8, std. trans., factory installed camper unit, $2,600. 213-672-4231. A

Chevelle, 1965 Malibu, V-8, 4-dr. sedan, p/s, auto., good tires, new brakes, $1,385. 213-756-4702. A

Station Wagon, 1959 DeSoto, p/s, p/b, $175. 213-328-2159. A

Buick Skylark, 1963 V-8, auto. trans., p/s, radio, $1,000. 213-830-6163. A

Falcon, 1961, 4-dr. sedan, auto. trans., 43,000 mi., r/h, $195. 213-679-3889. A

Karmann Ghia, 1963, AM-FM radio, $995. 213-454-2198. A

Volvo, 1964, P1800 spt. cpe., chrome whls., r/h, o/drive, $2,300. 714-635-5912. A

Station Wagon, 1959 Ford, auto. trans., a/c, r/h, w/s/w tires, $295. 213-634-6000. A

Mercury, 1962 Monterey Custom, 4-dr., 51,000 miles, fact. air, $795. 213-629-4111. A

Cadillac, 1963 Fleetwood 60 Special, full power, air, fact. cast alum. wire whls., $1,995. 213-541-1321. A

Camper, 1965 Volkswagen, awning w/sides, ice box, stove, water tank, $1,595. 714-962-1805. A

Station Wagon, 1961 Ford, 10-pass., $195. 213-377-4943. A

Chevy II, 1963 Nova convt., S.S., r/h, p/s, auto. trans., $650. 213-379-1873. A

Mercedes Benz, 1960 300 SL rdstr., Decker-Mexico AM-FM, Pirelli tires, tonneau, spare parts, tools, shop manuals, $5,000. 213-799-3170. A

Ford, 1957, V-8, 4-dr. sedan, needs paint, $85. 213-774-4281. A

Corvette, 1964, 327 cu. in., 4-spd., AM-FM-vibrasonic radio, $2,500. 213-581-5068. A

Ford, 1958 Tudor sedan, 6 cyl., std. shift, 74,000 miles, $100. 213-377-9666. A

Volkswagen, 1966, 2-dr. f.b., r/h, fact. air, 20,600 mi., $1,625. 213-329-1905. A

Truck, 1965 Ford, ½-ton, 3-spd., V-8, $1,185. 213-376-5553. A

Household Items For Sale

Dryer, Frigidaire, elec., $30. 213-363-6617. B

Tables, white limed oak, step end, matching coffee table, Valspar finish, $25. 213-675-9530. B

Washing Machine, Kenmore, new pump, self-cleaning filter, model 70, $100. 213-644-5449. B

Twin Bed, maple, 4-poster, box spring & mattress, $35. 213-672-8468. B

Blanket, elec., Sears, dble bed, single control, gold, acrylic, $13. 213-676-7766. B

Cabinet for TV & stereo, custom-made in Hong Kong, ebony teak, hand-carved panels & doors, 7′ long, $388. 213-329-0086. B

Range, Gaffers & Sattler, gas, 4-burner & grill, $45. 213-676-9855. B

Piano, Weaver bungalow spinet, mahogany, full keyboard, full-size sounding board, $425. 213-645-4208. B

Piano, Janssen, spinet, upright, mahogany finish, full keyboard, $295. 714-535-1397. B

Dining Room Set, 42″ dropleaf ext. table, 42″x72″, w/2 fills, extends to 96″, 4 Windsor fiddleback chairs, solid birch, $175. 213-675-3957. B

Range, elec., white, $25. 714-549-2763. B

Rocker, spring-swivel, gray tweed, $20. 213-323-8089. B

Dishwasher, G.E. portable, coppertone, $110. 805-498-4237. B

Refrigerator, Admiral, 1½ yrs. old, $95. 213-534-3410. B

Dinette Table, gray, 6 chairs, $40. 213-676-6503. B

Table, round, dble. deck, maple, $30. 213-675-5522. B

Table Lamps, matching pr., Empire design, 39″ tall, $15 or sell sep. 213-679-1631. B

TV, 1963 21″ RCA, b&w console, $65. 213-320-6272. B

Sectional, 4 pc., $150. 213-662-5388. B

Dressing Table, baby's, w/4 wicker baskets, $8. 213-835-3869. B

Piano, fruitwood, provincial, 2 yrs. old, $500. 714-774-3751. B

TV, 21″ Hoffman, b&w, mahogany cabinet w/doors, new tubes, $35. 213-675-5258. B

Headboard, & bed frame, solid oak, dble. size, $12. 213-674-4271. B

Miscellaneous For Sale

House, 4-bdrm., 2 baths, patio, fireplace, b/wall, 15 min. to Northrop, $29,500. 213-320-6975. C

Camera, Polaroid 103, w/flash, carrying case & color film, $60. 714-897-8447. C

Organ, electronic, Conn, w/bench, $1,100. 213-675-0521. C

Triplex, 2 bdrms. each, near shopping center, carports, laundry rm., h/wood floors, $40,000. 213-537-3098. C

Acreage, 7½ acres, near Victorville & Feather River Lake, $500 dn., $50 mo., $5,750. 213-327-8046. C

Motorcycle, 1948 Velocette, 500 cc, $50. 213-671-9657. C

House, 2-bdrm., fireplace, cpts., lge. yard, close to grade school, in North Inglewood, $22,750. 213-645-4163. C

House, 2-bdrm., 2 baths, patio, gar. & extras, disposal, 2 blocks from beach, $25,000. 213-679-7909. C

Earphones, complete w/jack, $20. 213-673-1133. C

Sailing Sloop, 11′, R-11 class, wood covered w/fiberglass, inc. trailer, boat cover, $500. 213-375-3902. C

Honda, 1968, Superhawk, 305 cc, Continental hand grips, rack, $580. 213-673-0859. C

Utility Trailer, 6x7, adj. height, $125. 213-325-8478. C

Boat, 16′, Horizon, all glass, w/Merc. 1000, trailer, many extras, $1,375. 213-326-4944. C

Tires, 2 Goodyear Blue Streak racing slicks, 11.00x16, $30 ea. 213-676-2162. C

Motorcycle, Honda 150, starter, $250. 213-325-3724. C

Lot, ½ acre beach property, near Redwood Nat'l Park, 15 mi. so. Oregon border, $1,000 equity, $1,400 bal., $2,400. 805-942-5306. C

Acreage, 2½ acres, near Twenty-Nine Palms, one mile from proposed Sportsman's Center & lake, $2,000. 213-677-3471. C

Formal, mint green, floor length, white lace empire top, sleeveless, crepe bottom, size 7, jr. petite, $12. 213-755-7255. C

Poodle, white, miniature, papers, 1½ yrs. old, shots, $25. 213-644-3429. C

Car Top Carrier, enclosed, $15. 213-644-3116.

Guitar, Fender stratocaster, $200. 213-371-9925. C

House, 3-bdrm., 15′ sq. living rm., 13x23 rumpus rm., 2-story, bltins, d/washer, fenced, 20 min. from Northrop, 2 baths, cpts., dps., $33,000. 213-635-3056. C

Boat, 12′, 40 h.p. Mercury, elec. start, $325. 213-672-7978. C

Camper, 1965 Cab-O-Tel, w/cargo door, boat rack, other extras, $250. 213-371-2948. C

Surfboard, Bing, 8′11″, $20. 213-375-5097. C

Fall, dark brown, 18″, $50. 213-398-5807. C

Tape Recorder, Sony 530 model, 1 yr. old, $225. 213-325-7936. C

Cello, w/case & bow, $165. 213-479-1432. C

Pup, chihuahua, male, 3 mos. old, AKC pedigree, has distemper shots, $65. 213-545-3941. C

Motorcycle, 250 cc, Big Bear, $375. 213-863-0761. C

Miscellaneous For Sale

Stove, 2-burner Coleman, Coleman lantern & J. C. Higgins ice chest, $30. 213-371-1905. C

Motorcycle, 1966 Yamaha Big Bear Scrambler, $400. 213-324-7698. C

Generator, d/b 1,000 watt gasoline-powered portable, $50. 213-581-0863. C

Surfboard, Hot Curl, 2 mos. old, 9′7″ long, $105. 213-862-3095. C

Ski Boat, trailer, 13′ Wizard, fiberglass, no motor, $260. 213-378-3055. C

Sand Sailer, 10′ custom, $150. 213-377-5862.

Chain Saw, Homelite, 22″ & 36″ cutting bars, $65. 213-676-3379. C

Pups, kerry blue terrier, AKC champ. sired, $150. 714-879-7276. C

Honda, 1967 CB 160, $400. 213-674-1829. C

Surfboard, 10′9″, wet suit, car racks, $100. 213-325-6605. C

Lot, view, Palos Verdes Ests., completely improved w/frontage on 2 existing streets, $26,950. 213-431-7058. C

Acreage, in Malibu Canyon, 1 to 3 acre parcels, $7,000-$10,000 acre. 213-671-8401. C

Camera, Mamiya C-3, 2¼x2¼ twin lens reflex, 105mm lens, case, $90. 213-596-9819. C

Cemetery Lot, Resthaven, Inglewood, dble. interment, $700. 714-521-0416. C

Boat, 14′ runabout, fiberglass, 60 h.p. o/board Evinrude eng., trailer, extras, $900. 213-644-4894. C

Wedding Ring, 2, matched, white & yellow gold, 2 diamonds in each ring, $100. 213-675-6186. C

Car Top Luggage Carrier, vinyl covered w/small padlock, used 1 week, $15. 213-679-6792. C

Tumbler, room for 2 1 gallon cans, $10. 213-322-5097. C

Racing Bicycle, Legnano-Campagnolo equipped, Pirelli tires, $65. 213-376-5139. C

House, 3-bdrm., 1 bath, 2-car gar., covered patio, cpts., dps., new stove, freshly painted, $23,000. 213-867-6880. C

Airplane, Cessna 140, all metal, 2 radios, 260 s.m.o.h., at Hawthorne Airport, $2,450. 213-397-8114. C

Accordion, 120 bass, D'Scala, case, amplifier cord, $250. 213-341-8056. C

Trailer, 9′ alum. teardrop, sleeps 2, water tank, storage box, ice box, extras, $190. 714-839-5730. C

House Trailer, completely furn., at Mammoth Mtn., $350. 213-545-6114. C

Trailer, sleeps 4, has 10′ ext., refrig., stove, $350. 213-632-1666. C

House, 3-bdrm., 1½ bath, lge. kitchen, ash cabinets, cpts., dps., acoustic ceilings, fenced yard, w/fruit trees, 2½-car gar., new roof & paint, stucco, $27,500. 213-679-2771. C

Stereo Components, Eico, HFT-90 FM tuner, HF-85 preamp, HF-86 28 watt amplifier & MX-99 multiplex adapter, $75. 213-439-6432.

Home, 4-bdrm., 2 baths, 2-car gar., lge. fenced in yard, near schools & Garden Grove Fwy., $21,995. 213-676-4203, 714-839-1053, 213-581-5208. C

Oscillating Fan, 10″ elec., $7.50. 213-876-7902. C

Tires, 2 7.75x14 retreads, tubeless w/wall, $7.50. 213-674-7743. C

Motorcycle, 1964 Honda Tourist, 305 cc twin, 12,000 miles, $250. 213-378-2965. C

Spinning Reel, Interceptor, open face, salt water compact, used once, $6. 213-370-9037.

Home, 3 bdrm., fam. rm., patio, near schools & shopping area, $23,750. 213-755-7521. C

Telescope Gauge, Lufkin, ½-¾, $2. 805-498-3549. C

Apt. Bldg., 8-unit & house, all 1-bdrm., 66 x 300 lot, 8 carports & 1 dble. closed gar., less than 10 yrs. old, 1½ mile from Northrop, $69,500. 213-677-4388. C

Sailboat, 28′ sloop, sleeps 4, inbd. eng., main, jib, genoa & spinnaker, $5,000. 213-378-4352. C

Picnic Table, 3 ft. wide, 12 ft. long, $10. 213-672-3460. C

Home, 4-bdrm., 2½ baths, formal dining or family rm., cpts., dps., $27,450. 714-532-1510.

Motorcycle, 1962 Honda 150, recent o/haul, $225. 213-377-5450. C

Boat, Utility, 18′, 50 h.p., Evinrude, big whl., tilt trailer, portable bait tank, $775. 213-679-8687. C

Power Amplifier, stereo, 50 watts per channel, $85. 213-326-6195. C

Golf Clubs, woods, 1, 3 & 4, Goldcraft, glass, med. shaft, D-4, $55. 213-545-2047. C

H. O. Train Layout, approx. 60 misc. cars, 5 engs., switch tracks, turntable, 3 power packs, mounted on 4′x10′ panel, $85. 213-291-0025. C

Tape Recorder, Martel, portable, used once, battery or 110 V, all attachments, $45. 213-372-1445. C

Boat, 10′, glass o/wood, $50. 213-327-4585. C

Motorcycle, Bultaco Sherpa, 200 cc, reblt. eng., clutch, desert-street equip., $375. 213-545-5023. C

Bunnies, Dutch, 5 wks. old, $1.50. 714-539-2262. C

Apts, 8 2-bdrm., $810 mo. income, $74,000. 213-837-0989. C

Acreage, 5 acres in Antelope Valley near Willow Springs, $35 dn., $35 mo., 6% interest, $3,500. 213-378-1026. C

Mini-Bike, 8 h.p. West Bend, lights, horn, dual tanks, racing seat, $135. 213-393-5649. C

Shotgun, 16 ga., Remington Sportsman 48, modified choke, semi-automatic, gun case & box of shells, $65. 213-751-6727. C

Miscellaneous For Sale

Boat, 15′, new Chrysler outbd., 55 h.p. w/trailer, never been in water, $1,550. 213-679-7966. C

Sloop, Cal 20, equipped for cruising, $3,100. 213-275-7168, 213-378-1561. C

Motorcycle, 1966 Yamaha, YDS-3, 250 cc, $350. 213-323-7544. C

Collie, 6 mos. old, tri, AKC, $50. 213-370-4475. C

Home, 5-bdrm., 2-story, 2 full baths, fireplace, patio, fenced yd., cpts., dps., 20 min. from Norair, $33,500. 213-632-3623. C

Lawnmower, rotary, Briggs & Stratton, $50. 213-321-0020. C

C.B. Radio, base station, General MC-7, 23 channels + Civil Air Patrol, all crystals supplied, $125. 213-398-3278. C

Fishing Boat, 12′ glassed, inc. marine permit, trailer, $125. 213-379-9584. C

Encyclopedia, set, 1966 Americanas, 30 vols., & set of The Harvard Classic, 51 vol., walnut bookcases, never used, $350. 213-323-1192. C

Snare Drum, Gretsch, blue sparkle, w/case & stand, 8 lugs, $55. 213-325-3452. C

House, 3-bdrm., 2 baths, pool, lge. covered patio, bltins, cpts., dps., Rolling Hills ests., 10% dn., $43,500. 213-375-8778. C

Honda, 1967 Sport 50, w/center tank, new knobby tire, 4,000 mi., McHal helmet, $175. 213-236-0206. C

Home, 3-bdrm., corner lot, $21,500. 714-826-4566. C

Record Player, RCA auto., 45 rpm, changes 10 records auto., inc. records, $20. 213-325-5245. C

Wanted to Buy

Rifle, Winchester, 25/35, carbine or long barrell. 213-323-4257. D

Encyclopedia, set, in good condition, Americana, Britannica or Colliers. 213-633-4600. D

Weights, set, for boy 14 yrs. old. 213-329-4200. D

Pool Table, wood or slate. 213-374-4703. D

Generator, portable gas-driven elec., 2,500 watts minimum. 213-674-7293. D

Stove, Coleman 3-burner & Mark IV auto air conditioner. 213-396-3825. D

Record Rack, round, Danish modern or similar dark wood. 213-677-7745. D

Golf Clubs, men's, reasonable price. 213-378-3600. D

Air Cooler, for auto, water evaporation type, for 12 volt system, reasonable. 213-321-1655.

Bicycles, 2 women's 3-spd. 26″, fair to good condition, or 1 man & 1 woman's. 213-373-5068. D

Surfboard, 9′6″-9′8″. 714-871-0880. D

Pup, German shepherd. 213-379-8090. D

Golf Clubs, women's, bag & cart, also, men's golf bag. 213-545-1676. D

Rod & reel, salt water, deep sea. Box 1401.

Free (To Be Given Away)

Swing Set, 3″ pipe, has to be set in concrete, needs new seats. 213-326-7528. F

Rentals Offered

Cabin, Lake Gregory area, sleeps 6, $70 wk.; $25 w/end. 213-545-6313. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Camping Equipment, 9x9 tent, $6 wk.; 10x12 tent, $12 wk.; stove, lantern, cots ea. $2.50 wk. 213-839-7145. G

Home, 2-bdrm., dps., cpts., 2-car gar., bltins, d/washer, trash & water paid, no small children, $150 mo. 213-379-6714. G

Apts, 3 blocks from ocean, cpts., dps., bltins, piped music, bltin vacuum, gar. w/storage cabinets, 1-bdrm. $110-$125; 3-bdrm., 2 baths, $175. 213-372-8835. G

House, 1-bdrm., unfurn., all utilities paid, adults, $95 mo. 213-675-1776. G

Cabin, Lake Arrowhead, close to lake & village, fireplace, patio, $60. 213-761-9645. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Manchester & Crenshaw Blvd., Los Angeles. Shirley C. Porter, Norair, ext. 4503, 4936, 213-752-5823.

7:30 a.m. — 4:12 p.m.

Hawthorne Blvd. & Century Blvd., Inglewood. Irene McCarthy, Norair, ext. 1581, 213-672-7506.

Sunset Blvd. & San Diego Freeway, Brentwood. Thomas F. Cook, Norair, ext. 4265, 213-826-3061.

8 a.m. — 4:45 p.m.

Westminster Ave. & Springdale St., Westminster. Jack A. Moberg, jr., Norair, ext. 2125, 714-893-3361.

Golden West & Bolsa, Huntington Beach. C. T. Donato, Norair, ext. 1481.

Rides Offered

8 a.m. — 4:45 p.m.

Westminster Ave. & Springdale St., Westminster. Jack A. Moberg, jr., Norair, ext. 2125, 714-893-3361.

Golden West & Bolsa, Huntington Beach. C. T. Donato, Norair, ext. 1481.

Rentals Offered

Cabin, A-frame, furn., sleeps 5, 40 miles west of Colorado Springs, close to stream & lakes, $70. 213-894-1937. G

House, 4-bdrm., 1¾ baths, just remodeled, new cpts., dps., near Northrop, $225 mo. inc. water & rubbish removal. 213-833-2512.

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Bachelor Apt, ½ block from Northrop, utilities pd., $80 mo. 213-675-6481. G

Cabins, Lake Gregory & Crestline, sleep 6, make reservations now, $25 w/end; $60 wk. 213-391-2040. G

House, 3-bdrm., 2½ baths, cpts., dps., bltins, 5 yrs. old, 2-ton a/c, 3 patios, lease option avail., N.E. Orange, $225 mo. 213-845-9615. G

House, 3-bdrm., 1¾ baths, family rm., lge. living rm. w/fireplace & music rm., patio, fenced yd., walking distance to Northrop Hawthorne, $250 mo. 213-755-5149. G

Cottage, Ocean Bch., San Diego, near Mission Bay, $65 wk. 714-826-2007. G

Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $50-$80 wk. 213-754-5288. G

Rentals Wanted

Garage for storage. 213-679-7840. H

Garage, near Anaheim Facility. 213-782-5481.

Child Care

Child Care offered, all ages, hrs., day or week, lic. home, 10 min. from Norair. 213-644-3817. I

Lost

Ring, family signet, black on yellow gold, Plant I or III, approx. June 20, reward. 213-363-9284. J

Personals

My sincere thanks to all my friends at Northrop for the retirement luncheon & gifts. MAY HARRINGTON. L

I wish to extend my thanks to all my friends at Northrop for their many cards & kindness during my recent illness. GEORGE W. MIHELIC. L

It gave me a great lift to get so many cards & personal calls from my many friends at Northrop during my recent stay in a hospital. CARL H. FELDT. L

For Sale or Trade

Relaxi-Cizor, $125 or trade for good, used car. 213-323-8126. M

Poodle, mini-toy, cocoa, champ. stock, AKC reg., shots, $150 or trade for transportation car. 213-375-5885. M

CHRISTMAS ALL YEAR—Frank Crase (standing) and Betty Hodge (right) of Harbor General Hospital visited Northrop last month to present a special plaque recognizing the continuing support of employees to hospital programs at Christmas and throughout the year. John Richardson and Marie Tully accepted on behalf of Northrop employees at the Corporate office, Norair and Nortronics Divisions.

Instruments Make Dodge Part Plane, Part Auto

For an automobile that was recognized as a pretty good buggy in its day, Ronald McKenzie's 1940 Dodge looks suspiciously like three different airplanes which were pretty good in their day, too.

At least it looks that way from the cockpit . . . er, uh . . . driver's seat.

Anyway, Mr. McKenzie, SUU-42A program manager, has taken 29 different instruments and gauges from surplus B-29's, F-84's and F-86's, and has installed them into the dashboard and above the windshield of the Dodge. Surprisingly, everything works.

There is a miles per gallon indicator, an airspeed gauge and a voltmeter, as well as a dial indicating the intake manifold pressure and another for the manifold temperature. Mr. McKenzie has adapted an air tachometer and a fuel consumption meter, and various warning lights and danger signals. This is not counting a double battery system, twin horns and several oil and gasoline pumps, including the one which controls the emergency fuel system.

Otherwise, there is an F-84 deicing alcohol tank, a re-worked differential, power brakes, overdrive and a gyro compass.

Outwardly, the vehicle is still a 1940 Dodge. The glove compartment has remained intact, but Mr. McKenzie has plans for more gauges to occupy the space soon.

Mr. McKenzie has five other automobiles, but has never owned a showroom new car. Each of three cars in his fleet (1951 Cadillac, 1952 MG-TD, 1953 Plymouth) has been, like the Dodge, driven over 100,000 miles. He has just added a 1959 Volkswagen and a 1964 Pontiac, and now has more trouble parking at home than at work.

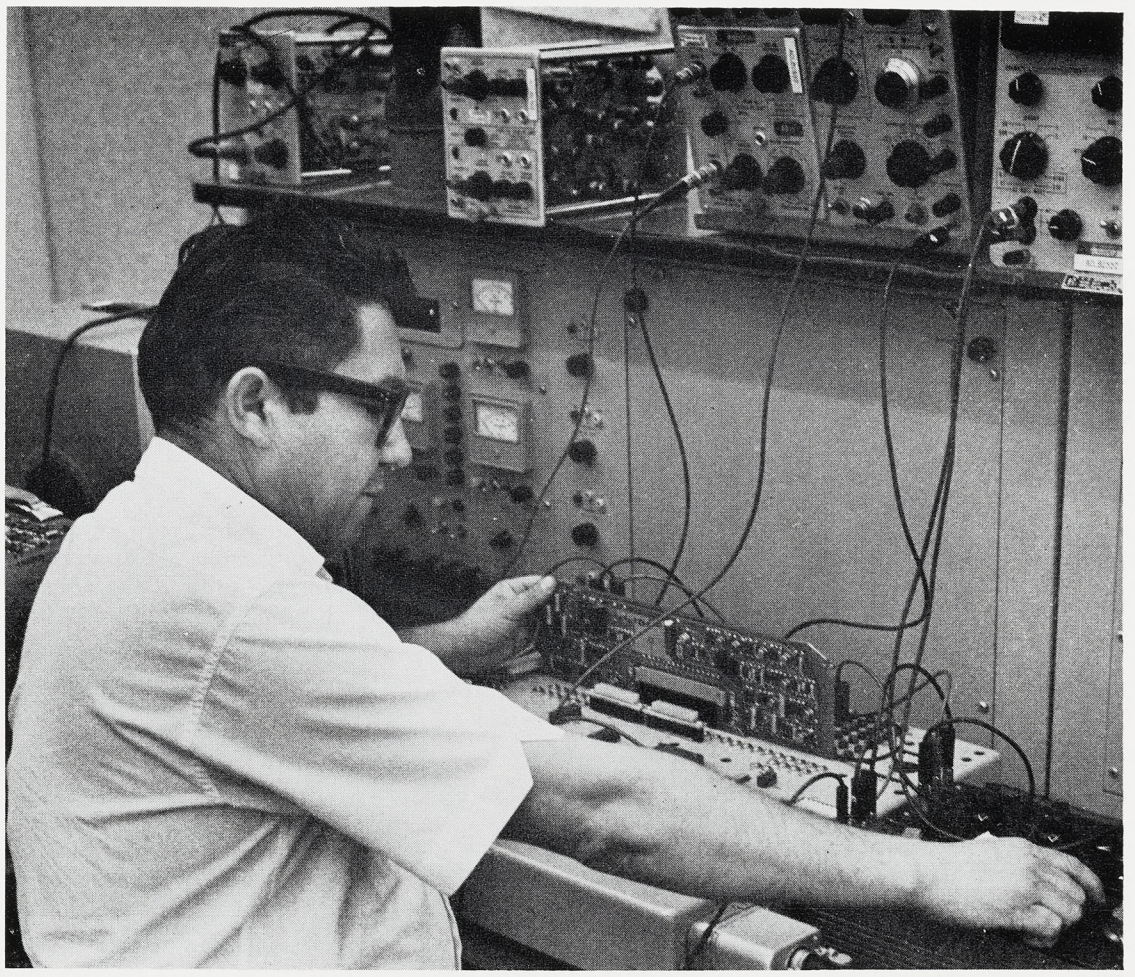
By agreement with his wife and son, there are no aircraft instruments in any of the other cars. As a hobby, Mr. McKenzie has been instrumenting the Dodge since 1953, but has owned it since the spring of 1941 when it was only 6,000 miles old.

Mr. McKenzie is an engineering specialist and has a degree in physics.

He figures he has spent about $400 and nearly 1,000 man-hours in instrumentation of the Dodge.

The end is not in sight.

IT'LL NEVER FLY, it just looks like it could. Ronald McKenzie's 1940 Dodge has covered more than 150,000 miles on the road. The aircraft instruments are a hobby of Mr. McKenzie, but all really work, registering readings on the car's internal functions and performance.



VERSATILE WORKER — Raynaldo Saavedra has worked for Northrop 16½ years and, in that time, acquired the experience that makes him a versatile systems test inspector. He is employed in the Polaris Support Depot and Electrical Fabrication department at Nortronics Anaheim.

SEES BRIGHT FUTURE

Saavedra Works for Hope of Stability

In his quiet way, Raynaldo Saavedra represents the kind of conscientiousness and open-mindedness which are the basic strengths of both corporations and families.

Mr. Saavedra, presently in the Polaris Support Depot and Electrical Fabrication department at Nortronics Anaheim, has been with Northrop for 16½ years.

Ray Beamon, chief of Product Assurance, says that Mr. Saavedra "has been a very conscientious and dependable employee with versatility that allows him to be used in any and all test phases of the Polaris Support program."

Mr. Saavedra is also the father of four children, two boys aged 18 and 15 and two girls aged 13 and 11. His commitment to youth is firm: "the younger generation is not entirely right, but the philosophy of what they want is sound."

He wishes to insure his children the education they want. He thinks education can stimulate responsibility and he is encouraging his oldest son to pursue a career in law.

Mr. Saavedra came to Norair in May 1952 to work on the checkout of F-89 electrical systems. From there, he proceeded to electrical and instrumentation checkout of the Snark missile.

He worked on an actual Snark test firing in 1956, accompanying a Northrop team to Florida for the shot.

He was transferred to Anaheim six and a half years ago. His most recent work has been as a systems test inspector for Polaris ground support equipment.

In his dual role as employee and father, he has come up with some rather definite ideas about both.

Of Northrop, he says, "As long as you have to work for somebody, this is about the best place to work. There are a lot of benefits working in a large corporation. Hospitalization programs and fringe benefits can't be beaten."

As a parent, Mr. Saavedra is, of course, worried by the sometimes violent conduct of youth. Yet, he is confident of the outcome.

Mr. Saavedra emphasized he feels it is of utmost importance for the young to remake their world according to their ideas, but keep that activity within the confines of reason and the law.

Thus, for Mr. Saavedra, his role as a father has contributed to the assurance of a better future, while his long service at Northrop has been his personal contribution to the stability of his own times.

Daniel Presents OMEGA Paper To Institute of Navigation

A Nortronics Navigation department engineer has presented a paper dealing with airborne OMEGA navigation set to the twenty-fourth annual meeting of the Institute of Navigation at Monterey.

Donald B. Daniel delivered his paper before an afternoon general session of the institute. Mr. Daniel told of the navigation set's characteristics, ability, advantages and improved performance.

Mr. Daniel

The purpose of the Institute of Navigation is to elevate standards by coordinating knowledge and achievements of practicing navigators, scientists and those involved in the development and production of navigational equipment.

Another Nortronics employee, Winfield Arata, jr., is western regional vice president of I.O.N.

BIOSATELLITE

(Continued from page 1)

oral task panel which will be mounted in the capsule, Nortronics is building the signal conditioner which will transmit instantaneous data concerning the monkey's responses, and also the main housing. The housing will include logic circuitry, programmers and the power supply.

The last developmental model vital to final checkout and two flight models have been delivered by Nortronics.

SERVICE

(Continued from page 1)

Payable at Anaheim, and Mr. Perry, also at Anaheim, is a Major Proposals estimator.

Eighteen others are now eligible for 15 year pins. In Anaheim they are: Cashus Ackley, jr., Clarence Almich, Buddy Carlson, Eugene Courtier, Harry Dent, jr., Mary Hangsleben, Mack Hawkins, Cameron Leavenworth and Grace Regan.

Five Hawthorne employees are: Robert Allen, Victor Moore, Bruce Rapp, Carrie Shepherd and Erwin Steinmeyer.

From Palos Verdes the recipients are Tommy Asahina, Imogene Pierce, Floyd Priest and Herbert Schmitz.

747 STRINGERS

(Continued from page 1)

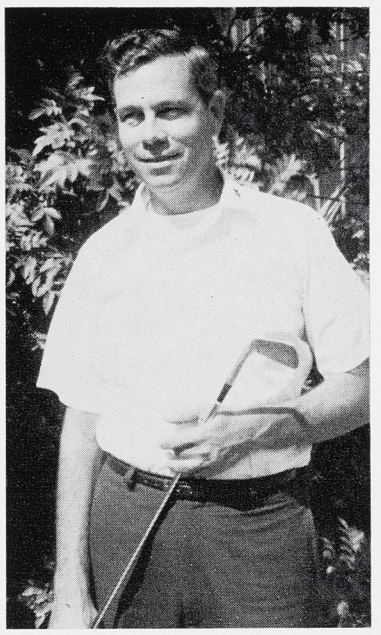
length from 18 inches to 36 feet and include 123 configurations distinguished by 498 individual part numbers.

Wilson Captures State Amateur Golf Tournament

Virg Wilson has been driving, chipping and putting around the monthly tournament circuit of Nortronics golf for several years. He has a bucket of prize golf balls to prove it.

But now, Virg, who is supervisor of Configuration Control at Hawthorne, has accomplished the most important feat to date in his linksmanship. He has captured his flight comprising 16 statewide golfers—all playing within a 5-10 handicap range—in the California State Amateur Tournament.

The match play tourney, played over the Monterey Peninsula Country Club course, had no better effort in the Cam Puget flight as Virg championed all challengers with scores of 7-6, 3-2, 6-5 and 3-2.



Virg Wilson won a beautiful silver tray for his championship play in the California State Amateur Golf Tournament.

NORTHROP NEWS

NORTRONICS DIVISION EDITION

Northrop Corporation, Beverly Hills, California Vol. 26, No. 15 July 31, 1968

C-5 IDNE Flight System Delivered to Air Force

The Nortronics Navigation department, under contract to Lockheed-Georgia Company, has delivered to the U.S. Air Force at Holloman Air Force Base one C-5A Inertial Doppler Navigation Flight System and related ground support equipment. A second system will follow early next month.

Both flight and test equipment have been shipped to the Central Inertial Guidance Test Facility at Holloman Air Force Base, Alamogordo, New Mexico. The navigation gear will be installed next month in an Air Force C-130 preparatory to seven and one-half months of flight testing.

Afterward, the equipment will be returned to Nortronics' Navigation department for refurbishment and re-delivery to Lockheed at Marietta, Georgia for use in the C-5 operational program.

Nortronics navigation systems engineers will be in residence at Holloman for the duration of the program to assist the Air Force in the navigation system demonstration tests.

The next important step for the Navigation Department in the C-5 program will be the Production Item Conformity Inspection (PICI) scheduled for August 12 in Hawthorne. At this time, a Lockheed team will inspect and verify all aspects of Nortronics operations in preparation for delivery of production C-5 IDNE hardware in compliance with Lockheed's requirements.

FREE TO ALL—Pati Harrison, delivers a copy of "American Voter 1968" to Marvin E. Beyrodt, jr., of the Community Relations staff. Handbook, containing a wealth of election and government information, is available to West Coast Northrop personnel free through Industrial Relations.

TEAMS System Aboard Ship For Sea Tests

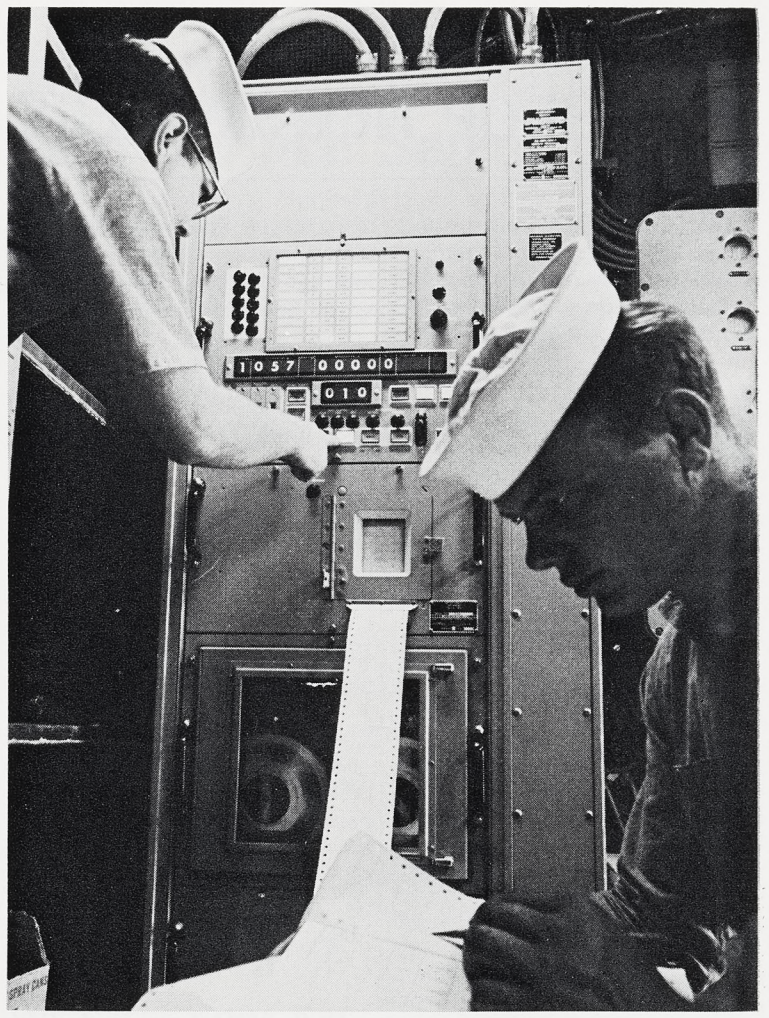
Nortronics' Test Evaluation and Monitoring System (TEAMS) equipment aboard the USS Coontz has undergone its first extended period of testing at sea under actual operating conditions.

The ship is currently enroute from a training cruise in the Pacific area.

Upon return of the Coontz, a formal shipboard technical evaluation program will be conducted by Naval Ships Engineering Center personnel. TEAMS will then undergo a two-month operational evaluation testing program.

The purpose of the operational evaluation is to establish the overall combat effectiveness improvement with the use of TEAMS which automatically monitors prime systems and provides the ability to rapidly isolate a malfunction.

The prime systems to be monitored on board the USS Coontz are the AN/SPS-10 Search Radar and the AN/SPG-53 Fire Control Radar.



ELECTRONIC TROUBLE SHOOTER—Automatic test and checkout of critical electronic equipment aboard 1052 Knox class anti-submarine warfare destroyers will be done by TEAMS, shown here undergoing test installation on the USS Coontz.

NORTRONICS JOINS ASMS STUDY TEAM

Nortronics has accepted the invitation of General Dynamics, Pomona Division to join in proposing for contract definition and engineering development phases of the Navy's new Advanced Surface Missile System (ASMS).

Nortronics' portion of the proposal effort will involve integrated system maintenance.

Other team members participating with General Dynamics include Hughes Aircraft Company's Ground Systems Group and Sperry Rand Corporation's Sperry Gyroscope and Univac Division.

N. S. Bishop, chief of Nor-

(See ASMS, page 6)

Old Fashioned Picnic Planned for August 25

It's Old Fashioned Family Picnic Time again at Nortronics.

The date is Sunday, August 25 at Swiss Park, 2501 East Huntington Drive, Duarte.

With the event less than a month away, NRC council members and representatives are busy arranging for what will be one of the year's largest Nortronics employee outings.

Because extensive preparations are necessary, Nortronics employees and guests wishing to attend must make reservations not later than Friday, August 2. This can be accomplished by returning the reservation form included with last Friday's paycheck to any Nortronics Personnel Activities office. Tickets may be picked up beginning August 12. Park facilities are limited to 2,500 persons. Reservations will be accepted on a "first come" basis.

The cost will be only 25 cents for each employee and each immediate family member and $1 for each guest.

Activities will run from 10:30 a.m. to 5 p.m. Fun for all age groups will include magic and puppet shows, pony and kiddie rides, clowns, games, contests and an abundance of prizes.

Everyone attending will receive free soft drinks, ice cream and popcorn.

Arrangements are for picnickers to provide their own lunches. Hot dogs and beer will be available at 25 cents each.

A highlight of the day's activities will be a doubleheader softball game involving teams from Anaheim and Hawthorne.

Voter Guidebook Made Available As Election Aid

A guidebook to the national political conventions and 1968 elections is available to all Northrop personnel in West Coast facilities.

The booklet, "American Voter 1968," may be obtained upon request at certain Industrial Relations and Personnel Activities offices in all three divisions as well as Corporate offices and Corporate Laboratories.

Distribution of the handbook is part of Northrop's participation with other Southern California industrial firms in a program urging all citizens to take a more active part in political activity, both local and national.

Immediately following the Republican and Democratic conventions next month, special voter registration facilities will be set up in most West Coast facilities for the convenience of Northrop people who may be presently unregistered or have changed residence.

CASH FOR IDEAS

Suggesters Win Largest Total in Awards History

The largest cash total in the history of the Nortronics Suggestion Awards program—$2,487 was paid this month to 26 suggesters for 29 cost saving suggestions.

Mr. Oare

Seven awards ranging from $139 to $450 were received by six Anaheim employees and one from Hawthorne.

In Anaheim, the month's big winner, Max Oare of Tool Manufacturing, took home $450 by suggesting the design of a fixture for removing worn adiprene inserts from joggle dies.

Estes Kelley won two separate awards totaling $352. He developed a repair stand for holding load bars on the stringer line and suggested relieving edges on stringer joggle press keyways.

Thomas Kennedy suggested an improved wire tying material which brought a check for $247 and has now been adopted as a new Anaheim standard.

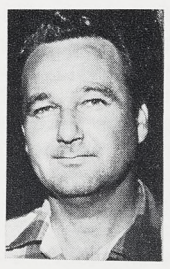
Ron Cramer won two separate awards totaling $170 for his suggestions involving improved techniques for cleaning diverter valves. Don Baker's award was for $140 for suggesting modification of the diverter valve inspection fixture for use on the Picomm three-axis coordinate measuring machine. Robert DiBenedetto devised a way to remove adiprene filler from rollform rolls and collected $139.

In Hawthorne, Gertrude Goldstein suggested plastic sleeving to facilitate electronic board pin location and received $273.

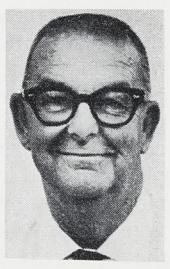
Other suggestion awards for the month were from $10 to $86 and went to the following employees.

Anaheim: Al Arroues (a $2,000 winner last January), Mary Jo Butler, Ronald Bybee, Charles Colburn, Robert Collins, Dennis Cornish, George Gullett, Carl Korte, James Linn and Charles Powell.

Hawthorne: Mike Ciavarella, Andrew Demetry, Lois Farrance, Anthony Musuraca, Ray Nowell and Arthur Smith.



Mr. Kelley



Mr. Kennedy

Mrs. Goldstein

Mr. Cramer

Mr. Baker

Mr. DiBenedetto

NORTHROP NEWSMAKERS

Dan Cashier, a Northrop employee for 12 years, has been installed as president of the San Fernando Valley Chapter of the National Association of Accountants.

Mr. Cashier

Mr. Cashier, a data processing specialist in Northrop's Internal Audit department, is in charge of Electronic Data Processing (EDP) Management Systems Audit. Before joining the Corporate office, he was with Northrop Ventura for 11 years.

He joined the San Fernando Valley NAA group in 1965 and was named its most valuable member in 1965-66. He became program director in 1966, communications director in 1967, and president this year.

The group has 400 members, more than 20 of them from throughout Northrop. Last year, the president was Ward Lanctot of Northrop Ventura.

* * *

Carl N. Brooks, of Norair's Electronic Systems Research group has been named chairman of the Vehicular Technology group, Los Angeles Council, Institute of Electrical and Electronic Engineers.

* * *

Bert A. Tueling, of Advanced Avionics Systems at Norair, has been elected chairman of the Aerospace and Electronic Systems group, Los Angeles Council, Institute of Electrical and Electronic Engineers.

* * *

F. W. Lloyd, vice president and general manager of Norair, has chaired the industrial management session of the Canadian Aeronautics and Space Institute and American Institute of Aeronautics and Astronautics joint meeting in Montreal.

At the session, **Dr. Donald Hicks,** vice president and general manager of Northrop Corporate Laboratories, spoke on "The Management of a Modern Aerospace Research Program."

The CASI/AIAA meeting consisted of four sessions considering the general topic "Management in the Aerospace Fields."

* * *

J. P. Raymond, senior Technical staff member, Northrop Corporate Laboratories, will be a guest lecturer at a two-week UCLA short course on "Radiation Effects on Semiconductors" September 9-20.

* * *

A. H. Friedman, Norair Metallics Research, has presented a paper titled "Suggested Practice for an Accelerated Stress-Corrosion Test for High-Strength Ferrous Alloys" at a recent ASTM Meeting, San Francisco.

* * *

D. B. Adarkar and **G. R. Hall,** Norair Internal Aerodynamics and Propulsion Research, have co-authored an article titled "The 'Fountain Effect' and V/TOL Exhaust Ingestion" for publication in the Journal of Aircraft.

* * *

M. S. Cahn, H. R. Wasson and **J. R. Garcia,** Norair Aerodynamics and Propulsion Research and Technology, have co-authored a paper titled "Transonic Airfoil Design by Prescribed Velocity Distribution" for presentation at an AGARD Specialists' Meeting on Transonic Aerodynamics in Paris during September.

"Politics ought to be the part-time profession of every citizen who would protect the rights and privileges of free people."

—Dwight D. Eisenhower

CONFERRING ON AGENDA—F. W. Lloyd (seated), vice president and Norair general manager, talks with speakers at the second session of the CASI/AIAA joint meeting held in Montreal. Mr. Lloyd was chairman of the session, one of four held during the meeting. Dr. Donald Hicks (right), vice president and Northrop Corporate Laboratories general manager, spoke at the session on "The Management of a Modern Aerospace Research Program."

New Million Dollar Research Center Planned by Page

A new Northrop research facility, designed to focus on world communication techniques and systems for the future, is planned for construction next year.

The $1 million center will be built near Vienna, Virginia, by Page Communications Engineers, a Northrop subsidiary. It will be named the Northrop Page Industrial Park.

Page's present research and development organization at Westgate, Falls Church, Virginia, will move to the new complex late in 1969.

Page now employs more than 3,000 people in 20 countries. Six hundred are located at the Page headquarters in Washington, D.C.

Page associate firms include: Page Iberica in Madrid; Page Europa, S.P.A. in Rome; and Page Telecommunications, Ltd. in the Bahamas. Page also operates a 100-acre propagation test range on Taylor's Island.

NORTHROP PAGE Industrial Park, a million-dollar research and development facility, is being built at Vienna, Virginia. Joseph A. Waldschmitt (seated, right) acts to acquire land from Harry Warshaw, its former owner. Standing (left to right) are Clay Harrell, Vienna town manager, James Martinelli, Vienna mayor, John Jansen, a Page director, and Peyton Klopfenstein, realtor.

NASA Reaffirms Cost and Management Improvement

Northrop Corporation's active Cost and Management Improvement Program has once again passed a detailed review and evaluation conducted by the National Aeronautics and Space Administration (NASA).

Notice that Northrop cost reduction efforts have been reaffirmed was forwarded to Thomas V. Jones, president and chairman, from B. L. Dorman, NASA assistant administrator for Industrial Affairs.

Mr. Dorman noted that recertification was directly related to a program review and evaluation conducted during June at the Nortronics-Huntsville facility by cost reduction personnel from NASA's Pasadena office. Northrop's total cost reduction effort is reviewed annually by NASA for recertification purposes.

Mr. Dorman wrote: "We depend on the Northrop program, as well as the programs in operation at the other 38 companies participating in the NASA-Contractor Cost Reduction Program and the internal programs functioning at the 10 NASA field installations, to make a valuable continuing contribution toward conservation of NASA resources.

In his reply to Mr. Dorman, Mr. Jones stated, "You may be assured of my continued personal interest and the support of Northrop personnel throughout the company in achieving optimum economy in the operations of the space program."

Ken Hornor, Corporate coordinator of the Cost and Management Improvement Program, reports continued interest in the program throughout Northrop is evidenced by the fact that all divisions will substantially exceed established goals this year.

Page to Design, Install Systems In Libya, Angola

Northrop's subsidiary, Page Communications Engineers, has received two more contracts for long range communications systems to be installed in Africa. Total contract value is close to $2.5 million.

Occidental Petroleum Corporation of Libya, has placed a $1,790,000 order to Page for a communications system which will link the company's Tripoli headquarters with its pipeline at Zueitina. Installation of mobile units in vehicles has been completed, and additional equipment will be integrated into the system upon completion of the tropo and microwave facilities.

The second contract, for $653,000, calls for the linking of Luanda, Angola, with Angola's capital city of Cabinda, for the Gulf Cabinda Oil Company. The system will have 12 channels initially, with expansion to 24 possible.

HOW PARTY FUNCTIONS

Politics Based on Free Enterprise

(Editor's Note: Following is the third in a series of articles designed to acquaint Northrop personnel with America's two-party political system; to encourage everyone to support his party and candidates, and then vote in the November elections.)

America's political system is a direct reflection of the Free Enterprise system in which any man can succeed if he has a good enough product to offer the public, manufactures it well and markets it wisely.

In fact, the operation of a political party can be compared in many ways to the operation of an American business corporation.

Northrop sells aircraft, communications equipment and other products. Ford sells automobiles.

Democrats and Republicans sell services to make a profit and stay in business.

Like an industrial corporation, each party attempts to come up with the most appealing product package each election year. Each party, under the most intense competition, tries to present its platform and candidates as completely different from the opposition product. Each tries to offer the voter, the buying public, better government service and programs than the rival.

Also like a corporation, each party has a titular head. In case of the party in power, the president of the United States is that party's leader. The party which lost the last election may accept as its titular head the latest presidential candidate, or perhaps a new political figure who appears to have greater national popularity or position of power.

In one sense, each political party has a board of directors in people who make up the Central Committee. In a more real sense, however, the board consists of the delegates who go to the National Conventions and take the final action in nominating the party's top candidates and writing the party platform.

Each registered voter, of course, is a stockholder. In that capacity, he can exercise his authority by voting and also can wield a powerful voice by taking part in his party's activities at the local level. It is there—at the "grass roots" which we hear so much about—that political decisions are made and passed on to the higher echelons in the party.

It is safe to say that most of us feel we have no voice in selecting a national candidate. We may register as a Democrat or a Republican, and we may in turn vote in the state primary election, but at that point we seem to be confronted by a choice of names selected by some vague power structure beyond our ability to influence.

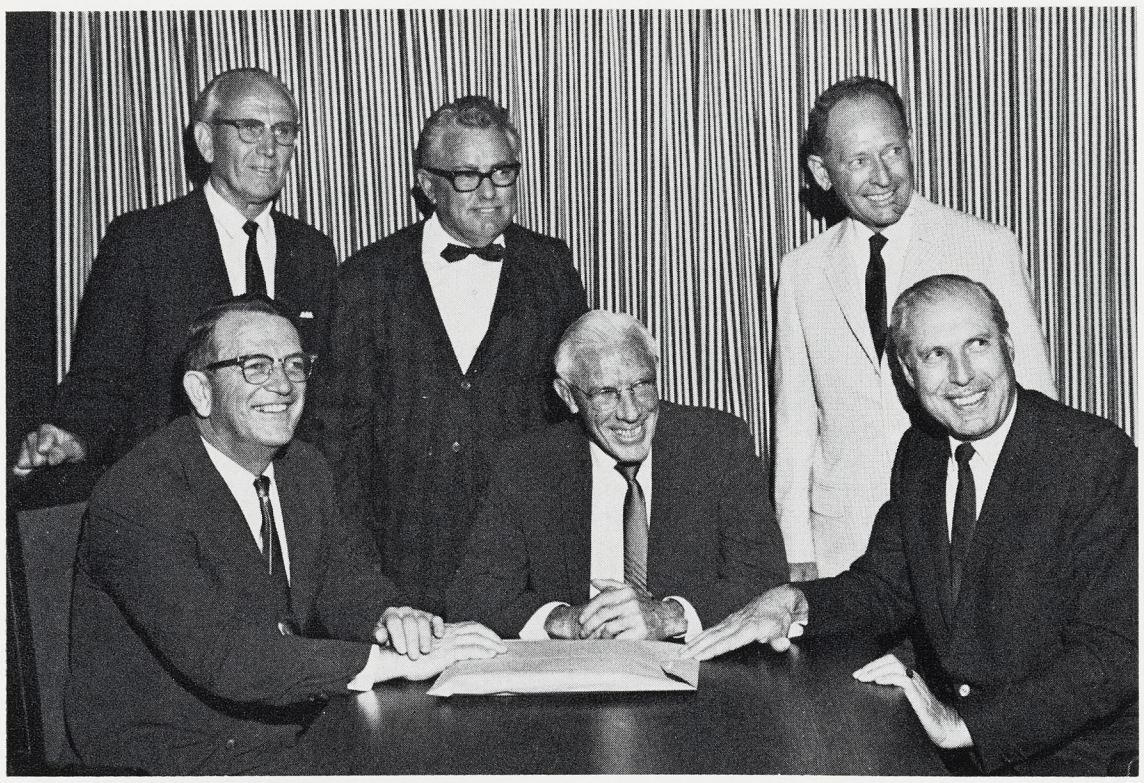
That is not true. Almost every political organization is hungry for new people, new blood, who will work and show an interest in what is going on. Anyone is welcome in most local political groups and once a person has shown his loyalty through work and participation, he will soon find himself with a considerable voice in selection of local candidates and delegates who will represent him higher up.

The nomination process in both parties comes to a focus in the magnificent circus known as the National Convention.

The 1968 Republican National Convention will begin Monday, August 5, in the Miami Beach Convention Hall, Miami Beach, Florida.

The Democratic National Convention will begin Monday, August 26, in the International Amphitheater, Chicago, Illinois.

(NEXT: THE CONVENTION)



RETIREMENT PARTY for Tom Chittenden (seated center) brought out scores of veteran Northrop employees, including those above who started their Northrop careers in 1939 and early 1940. Seated are Richard Nolan (left), senior vice president—Manufacturing and Administration, and Bob Catlin, Norair manager of Quality Control. Standing (from left) are Fred Griswold, Bill Boyes and Rex Bohling.

Tom Chittenden Retires; Held Service Seniority

Tom Chittenden, Northrop Corporation's senior employee in terms of service, ended a 28-year, 11-month Northrop career this month with retirement on his 65th birthday.

His farewell party drew more than 75 friends and well-wishers, including Richard Nolan, senior vice president — Manufacturing and Administration, who joined Northrop one week after Mr. Chittenden, Al Morgan, vice president—Industrial Relations, and a host of top Norair Division executives.

Mr. Chittenden has served Norair Division as Materiel superintendent for night operations since 1951.

He was hired August 20, 1939, just one day before Tom Quayle, Nortronics vice president.

Mr. Chittenden served as a guard at Plant Protection for almost a year before becoming a Materiel Control project man. In 1943 he moved into supervision in Inventory Control.

An avid golfer for most of his life, Mr. Chittenden received a gift certificate for golf equipment as a farewell gift. In a lighter vein, his friends bestowed upon him mounted photographs highlighting his long career and a battered golf ball, complete with "rejection tag."

HELP VA PATIENTS

PPD, NND Active in Therapy Project

Nortronics Division facilities in Needham Heights and Norwood, Massachusetts are participating in a program which provides manual work for the rehabilitation of mental patients.

The program, the Community Hospital Industrial Rehabilitation Project (CHIRP), involves high-volume metal finishing and electrical assembly work for the Nortronics facilities by mental patients at the Brockton, Massachusetts Veterans Administration Hospital.

Community members, the Needham and Precision Products Departments, feel this program is a real expression of community service.

"We are trying to rehabilitate and assist less fortunate people," said T. H. Quayle, vice president and manager of the Nortronics Needham facility. "From the Needham and Precision Products Departments' standpoint, the program is successful in all respects."

Twenty to thirty patients work in shops at the Brockton VA Hospital in two shifts. Nortronics spokesmen report that the work is of the highest caliber and satisfies the quality control requirements of the Department of Defense.

"This effort is in direct support of our production line; that's the reason we need reliability. The men in the program are treated as employees, not as patients," said Mr. Quayle.

Workers at the hospital receive hourly wages.

Occupational therapy, used as a transitional program prior to returning a patient to a productive place in society, is an old and successful psychiatric concept.

Dr. William Winick, director of the Brockton Hospital, founded the program in 1961. CHIRP depends entirely on subcontracts from private industries willing to provide meaningful projects.

NND and PPD actively seek this sort of opportunity to serve the community and, in turn, instill community pride in Northrop.

WORK THERAPY—T. H. Quayle (left), Nortronics vice president and manager of Nortronics Needham Department, and Richard Nolan (second from left), senior vice president—Manufacturing and Administration, watch patient at Brockton, Massachusetts, VA Hospital do electrical assembly work. Dr. William Winick, hospital director, is at right.

NAS Receives New Order for 737 Flooring

Northrop Architectural Systems (NAS) has received a new contract for almost $800,000 to produce lightweight aircraft flooring.

Issued by The Boeing Company, the contract covers flooring for approximately 200 Boeing 737 intermediate range jetliners.

NAS is currently fabricating a similar type flooring for the Boeing 747 jetliner. Less than one-half-inch thick, the flooring is made by bonding thin sheets of titanium, aluminum or fiberglass to fire-resistant polyvinyl chloride cores.

In addition, NAS has received a smaller order for flooring for use in a Super Guppy aircraft of the Aero Space Lines.

Loyal Massey heads the NAS flooring production organization which is located in Long Beach.

Centinela Valley School Board Elevates Weaver to Presidency

A Nortronics supervisor has been elected president of the Centinela Valley Union High School District Board of Trustees.

Donald M. Weaver, general foreman in the Nortronics Manufacturing Operations group at Hawthorne, will serve a one year term during the 1968-69 school year. He has served the Centinela district for four years and was vice president of the board last year.

Mr. Weaver

Mr. Weaver, a Northrop employee for 17 years, is vice president of the Los Angeles County School Boards Association and a past president of the Lawndale Elementary Schools' Board of Trustees. He is founder of the Fine Arts Association of Centinela Valley and is a past member of the board of directors for United Way.

SCOUT HONORED

Greg Young, 14, son of W. H. Young, Northrop Corporate Laboratories Accounting supervisor, has completed requirements for Eagle Scout honors.

IT'S A FACT AT NORTHROP

Northrop Ventura is the world's leading manufacturer of unmanned radio controlled aircraft.

Over the past 30 years the division, once known as Radioplane Company, has delivered more than 60,000 drones, most of them used for training anti-aircraft gunners in U.S. military services and other allied nations.

The first drone, the RP-1, flew in 1935. Since then the division has held a commanding position in aerial training targets, which also have been adapted for surveillance, logistics and other purposes.

Northrop Ventura landmarks in drone development include:

1942—First parachute recovery system developed for the OQ-3.

1950—First out-of-sight target system, the OQ-19B.

1955—First supersonic target, the XQ-4.

1957—First flight of first rocket propelled target, the RP-76.

1959—First Mach 2 target, the Q-4B.

1967—First flight of turbojet drone aircraft, the MQM-74A.

The U.S. Navy has ordered production quantities of the MQM-74A, scheduled to perform demonstration flights this summer and fall.

International users of Northrop drone aircraft include the United Kingdom, Sweden, Belgium, Holland, Spain, Italy, Iran, Saudi Arabia, Brazil, Argentina, Chile, Australia, Taiwan, Japan and Denmark.

J. C. Kitchen Will Direct New Function

Jeffrey C. Kitchen has joined Northrop Corporation as vice president for international development programs, Thomas V. Jones, Northrop president, has announced.

Mr. Kitchen will work with all segments of the company on planning and implementation of programs contributing to Free World national development.

Mr. Kitchen, formerly deputy assistant secretary of state for politico-military affairs, for the past year has been a member of the State Department's senior seminar in foreign policy. He began his career in foreign affairs as a specialist in Middle Eastern political and economic affairs during World War II.

Mr. Kitchen is a 1943 graduate of the University of Oregon, who later did graduate work in international economics and diplomacy at George Washington University.

Following a fellowship at the National Institute of Public Affairs in Washington, D. C., in 1943 and 1944, he undertook a number of assignments in the Middle East until 1947. From 1947 to 1950, he was country specialist for Iran in the State Department, and subsequently was deputy director of Greek, Turkish, and Iranian affairs for the department. He also served as deputy director of the Department's Executive Secretariat and as special assistant to Secretary of State Dean Acheson.

From late 1956 until 1961, Mr. Kitchen was a senior staff member of the Rand Corporation. He rejoined the State Department as deputy assistant secretary in 1961 to develop and head a new functional staff charged with coordinating the political and military aspects of foreign affairs on a world-wide basis.

SPO OFFICERS MEET—Colonels Charles H. Peterson (left) and Mark Treat meet in a conference at Norair. Colonel Peterson replaced Colonel Treat this month as Air Force F-5/T-38 Special Project Officer. Colonel Treat has been reassigned to the Air Force Aeronautical Systems Division.

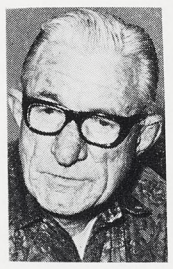
WHAT DO YOU THINK?

Do You Approve of The Current Emphasis on Jogging for Health?

Mr. Little

George Little, market research analyst, Nortronics Palos Verdes:

I think it's an outstanding pick-up by the American people. Just great. Jogging is good for everybody—for everybody for a life time. It's increased my endurance, my ability for sustained work, and my stamina going up and down stairs. I can keep up with my kids now.



Mr. Lynn

Japhet Lynn, stock clerk, Norair:

I think it's a wonderful thing. Jogging keeps a person's mind alert. He has a more relaxed mind. I was in professional baseball for 28 years. I tried to stay in good shape then. I still try now.

Mrs. Clary

Nancy Clary, general clerk, Nortronics Palos Verdes:

I think it's good. Good for your health. Most people who work in offices need it because they sit all day and get very little exercise.

Mr. Thompson

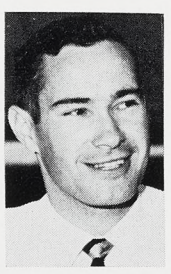
Gary Thompson, senior designer, Norair:

I think it's a lot better than doing nothing. People in America are too lax. I like everything outdoors—swimming, skiing, sailing.

Mrs. Ray

Pearl Ray, receptionist, Norair:

The new outfits, sweat suits and all, they wear should go over 100%. It seems that all the people who are interested in jogging are doing very well. I haven't done it myself, but the people who have done it find it to be very healthy.



Mr. Wood

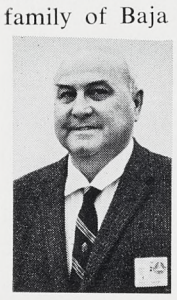
Van Wood, senior designer, Nortronics Palos Verdes:

I've noticed a lot of people jogging at odd hours. It's a good way to work up an appetite. Like most things of this nature, I think after awhile it will drop out of popularity.

SANFORD BOOK

Chronicles Baja Family

A Nortronics senior engineer, who writes prose and poetry, has published — in book form — an historical account of a pioneer family of Baja California.



Mr. Sanford

Paul Sanford, of Materials and Process Engineering at Anaheim, is author of "Where The Old West Never Died," scheduled for release next September. In his book, Mr. Sanford recounts the history of the pioneering Meling family who came to Ensenada in 1889 and built, over the ensuing years, the vast cattle empire that exists today.

Mr. Sanford has occupied his present position with Nortronics since 1956. Earlier, he was liaison engineer on the Hawk wing program and the Hawk launcher cables project. He took his B.A. degree in chemistry and physics at Milton College in Wisconsin, and did graduate work at the University of Iowa and the University of Southern California.

Mr. Sanford will retire from Northrop in approximately two years, after which he plans to spend full time in writing and research.

Meanwhile, his historical novel of the Sioux massacres of 1862 in Minnesota and the punitive expeditions of 1863-64 has also been accepted for publication next spring.

DR. HARMON FEELS

Hypnotism Unlocks Human Potential

Between flights at Washington's National Airport one day, Norair's Dr. E. L. Harmon happened to stop at a newsstand and pick up a book on hypnotism.

That was five years ago. Today, Dr. Harmon, a senior materials specialist in Norair's Research and Technology section, is an active lecturer and instructor on hypnosis and self-hypnosis.

"I had always been interested in people and their reaction to suggestion," Dr. Harmon said. "But this book started me really thinking about the value hypnosis can have on an everyday basis. Through hypnosis, I increased my ability to concentrate. My memory improved. I can relax better, and I've replaced old habits with new, more desirable ones."

Dr. Harmon began teaching an evening course he calls "Hypnosis in Your Everyday Life" at the Orange County Hypnosis Center in Tustin a little more than a year ago. Then, two months ago, he began a similar class at the Hawthorne Women's Club.

Watching Dr. Harmon teach the class is a fascinating experience. Often, he shows students magazine or newspaper clippings which illustrate a point. For example:

"Here's a story about a weight-lifter who weighs only 132 pounds himself," Dr. Harmon begins, "yet he can lift more than 300 pounds. Why? Here's why! 'I think very hard about what I'm going to do. I lift the weight mentally before I lift it physically.' "

All of which illustrates one of Dr. Harmon's favorite points: "Your body has to carry out whatever concept is lodged in your subconscious mind," he says. "The body is like a computer. A computer has no freedom of choice. It does what it is programmed to do. And this is what the body must do when ordered by the subconscious."

A generation or more ago, hypnosis was seldom taken seriously except by hypnotists. It was somehow associated with magic or the occult.

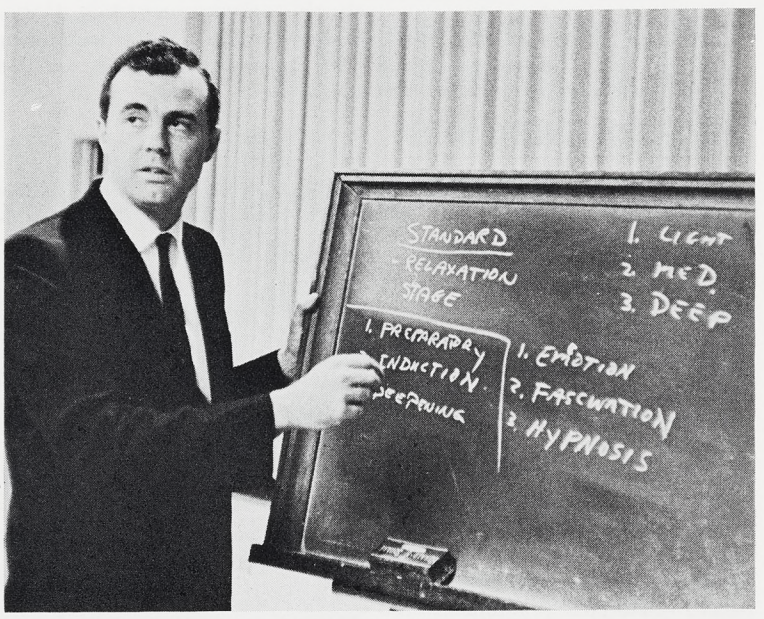
Today, this has changed. Dr. Harmon can list convincing reasons for the study of hypnotism.

"One basic purpose," he says, "is to make people more aware of the power of suggestion in everyday life. People are what they are, and do what they do, largely because of suggestions which their minds have accepted. When you understand how this process works, then you can be selective about which suggestions you accept and which ones you don't." It is Dr. Harmon's belief that a person who practices self-hypnosis can give himself useful suggestions while in a highly suggestible, or trancelike, state.

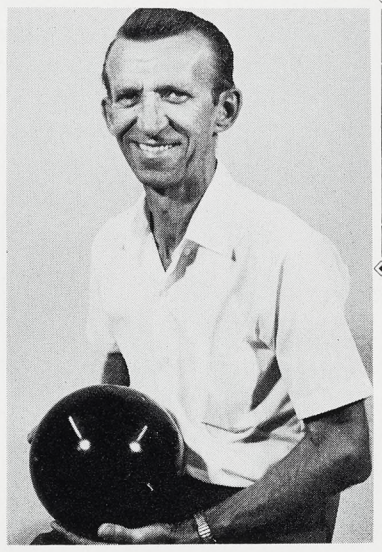
There's no magic, nothing mysterious about hypnosis, Dr. Harmon says, and the use is more widespread than one might think.

"Hypnosis is actually a state of profound concentration. Nearly everyone has been hypnotized," he says, "whether he knows it or not. The subconscious urging of an advertisement to buy

(See HYPNOTIST, page 5)



METHODS OF HYPNOSIS—Dr. E. L. Harmon, a senior technical specialist in Norair's Research and Technology section, conducts a class in hypnosis and self-hypnosis at the Hawthorne Women's Club. People have taken his class to lose weight, reduce tensions, combat nervousness and even improve their pool playing.



A new grip for bowling balls, devised by Ed Small of Nortronics, would not only eliminate the necessity of boring holes to a snug fit, but also relieve strain on the finger and thumb.

ED SMALL ADDS NEW GRIP TO BOWLING

A Nortronics bowler has invented a new technique for drilling finger grips in bowling balls.

Ed Small, foreman of the second shift in the Grinding Room at Page Court, is a champion kegler and developed his idea through his personal contact with the game.

Mr. Small envisions a non-slip ball with contoured finger holes drilled at angles instead of the conventional straight drilling. Mr. Small suggests eight basic variations on the grip which he feels will improve scores of the occasional and professional bowler and especially aid young bowlers, ladies and persons with weak hands.

Mr. Small believes the new grip would minimize or eliminate the dropping of the ball at time of delivery and do much to increase a bowler's comfort during his game.

The new idea of Mr. Small's has been granted a Patent Pending from the U.S. Patent Office in Washington, D.C.

A TOAST IN SPAIN—A recent dinner brought together the majority of Northrop personnel, and their wives, who are working in Spain with Construcciones Aeronauticas, S.A. (CASA) on the SF-5 Program. Dinner was one of the rare occasions when most of the Northrop group have been together at one time. The initial SF-5 aircraft has been test flown.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Ford, 1941 pickup, V-8, $350. 714-635-7814.

VW, 1965, many extras, $1,300. 714-525-7979.

Mustang, 1965 fastback, 271 hi-performance, h.d. suspension, rally-pack, 4-spd., $1,780. 213-833-4198. A

Corvette Stingray, 1965, w/fuel injection, mag wheels, $2,950. 213-374-2756. A

Mercedes Benz, 190 SL, 1956, $825. 213-373-1395. A

Chevrolet, 1937, 4-dr., antique, $75. 213-675-1064. A

Chevrolet, 1954, step-in van, built for camping, new tires, $1,200. 213-375-9811. A

Chevrolet, 1957, 2½ ton, '62 GMC engine (302 cu. in.), 4 speed box, 2 speed axle & 3 speed brownie, $985. 213-376-5553. A

Buick Special, 1956, radio, p/s, p/b, $200. 213-676-3494. A

Cougar, 1967, wood grained trimmed dash, 12,000 miles, $2,599. 213-370-9744. A

Karmann Ghia, 1964, r/h, $1,395. 714-982-0304. A

Station Wagon, 1965 V.W., 8-pass., $1,585. 213-333-2358. A

Pickup Truck, 1962, ½ ton Chev., w/camper, $1,250. 213-371-5975. A

Ford Falcon, 1964, 6-cyl., std. trans., r/h, $650. 213-644-5232. A

Station Wagon, 1960 Chevrolet, V8, r/h, auto. trans., $400. 213-377-4251. A

Pickup Truck, 1950, Ford & camper, V-8 rebit. eng., $300. 213-371-6912. A

Oldsmobile, 1957 h/top, p/s, p/b, $250. 213-675-8763. A

Ford, 1965 Falcon, 2-dr., 289, 4-spd., r/h, $1,250. 213-691-0064. A

VW, 1964, white, $995. 213-346-3751. A

Volkswagen, 1956, fastback, $1,550. 213-327-2802. A

Ford, 1963, 2-dr. sedan, $495. 714-534-6459. A

Chevrolet, 1961 Greenbrier 9-pass., van type. $395. 805-498-3857. A

Mustang, 1967 fastback, p/s, r/h, a/c, V-8, auto. trans., $2,450. 213-679-2039. A

V.W., 1966, f/b, r/h, fact. air, 20,600 mi., $1,625. 213-329-1905. A

Mustang, 1965, convt., 289 cu. in., auto. trans., p/s, $1,495. 213-378-8136. A

Chevrolet, Impala SS 396, 327, 4-spd., positraction, p/s, $2,100. 213-695-4514. A

Station Wagon, 1962 Pontiac Tempest, $350. 213-346-7830. A

Pontiac, 1967 GTO, p/s, r/h, auto. trans., 13,000 miles, $2,400. 213-534-3410. A

Chevelle, 1966, 427, 4-spd., $2,200. 213-329-5422. A

Pickup Truck, 1966 El Camino, Deluxe model, 327 cu.in., floor console, auto. trans., p/s, p/b, low mileage, $1,800. 213-675-7849. A

Chevrolet, Impala, 4-dr. sedan, p/s, p/b, r/h, 283 eng., $650. 213-327-2033. A

Pickup, 1957 Chevrolet, ½ ton, Hydromatic V8, $500. 213-343-7880. A

MGA, new eng. & clutch, new fiberglass hard top and soft top, plexyglass windows, $585. 213-451-5330. A

Ford, 1962 Galaxie, XL 500, low mileage, p/b & steering, $650. 213-325-2554. A

Cutlass, 1961, F-85, p/s, all-leather interior, $495. 213-377-8702. A

Chevrolet, Malibu 1964, 4-dr, p/s, V-8 283 cu. in., new battery, $1,150. 213-676-5219.

Pickup, 1960 Chevrolet, ½ ton, 6½′ bed, r/h, $695. 213-936-1224. A

Datsun, 1967 SSS Sedan, 4-dr., w/96 h.p., 4-spd. trans., low mileage, $1,450. 213-644-3135. A

Pontiac, 1963 Tempest LeMans, 2-dr., 4 cyl., auto. trans., 37,000 mi., $850. 213-375-8778. A

Ford, 1956 2-dr., new 1963 short block six, air lifts, rear speaker, Ansen steering wheel, gauges, $350. 213-677-7350. A

Volkswagen, 1967, w/s/w, $1,500. 213-374-2940. A

Pontiac, 1962, 2-dr., h/top Catalina, 389 tripower, cam, headers, new brakes, $460. 213-644-6733. A

Ford Fairlane, 1960, 2-dr., p/s, $225. 213-375-3150. A

Mustang, 1967, 13,000 miles, p/s, p/b, fact. air, auto. trans., $2,650. 213-644-4235. A

Mercedes Benz, 1957, 219 gas eng., 4 dr., AM/FM, 4-spd. synchro, $750. 213-372-5304.

Ford, 1963, XL 500, p/b, p/s, a/c, low mileage, $1,300. 213-374-5728. A

Mercury, 1958, 2-dr. sta. wagon, p/s, p/b, $250. 213-370-4315. A

Station Wagon, 9 pass., 1960 Dodge V-8, p/s, p/b, w/s/w, new brakes and water pump, luggage rack, $599. 213-371-3001. A

Automobiles For Sale

Model A Ford & parts, $335. 213-249-6222.

Cadillac, 1963 Fleetwood 60S, air, 40,000 miles, new tires, $1,895. 213-541-1321. A

Station Wagon, Oldsmobile, 1965 Vista-Cruiser 9-pass. positraction, Monroe load-levelers, heavy duty clutch & radiator, p/s, AM/FM radio, $1,195. 213-372-9001. A

Station Wagon, 1958 Ford, 4-dr., auto. trans., p/s, p/b, $150. 213-545-5995. A

Corvette, 1968 conv., 350 h.p., air, 4-spd., AM/FM, positract, p/s, dual 90 tires, 7,100 mi., $5,295. 213-542-4091. A

Camper, 1964, 8½′, non-cabover, Lovebird w/3 burner stove, on 1960 Ford 6 cyl. F-100 8′, $1,195. 213-377-5450. A

TR-4, 1964, wire wheels, overdrive, $1,300. 213-883-1569. A

Household Items For Sale

Dryer, Easy, elec., 220 V., copper color, $150. 714-630-1844. B

Vacuum Cleaner, Hoover 86 Constellation, canister type w/acces., $10. 714-527-6836. B

Refrigerator, Hotpoint, frost free, $75. 213-631-4072. B

Air Conditioner, General Electric, thin line compressor type, 7500 BTU capacity, with steel porta-cart stand, $100. 714-528-7636. B

Air Conditioner, Hotpoint, 9100 BTU, $75. 213-644-5449. B

Dishwasher, portable G.E., 1 yr. old, $125. 213-645-5786. B

Refrigerator, Frigidaire, 15 cu. ft., $50. 213-645-7484. B

Washer, G.E., automatic, $20. 213-644-2607.

Stove, O'Keefe & Merritt, $35. 213-671-2930.

Washer & Dryer, Hotpoint, 2 yrs. old, coppertone, $175. 714-638-4014. B

Dishwasher, Kenmore, portable, top-loading, $65. 213-323-4116. B

Desk, formica top, $35. 213-377-7317. B

Headboard, for single bed, antique, white & gold ornamental, $12.50. 213-675-3957. B

Miscellaneous For Sale

Wheel Chair, standard size, $25. 213-376-3533. C

Car Top Carrier, vinyl coated fabric, weatherproof, 6′ long, fits any station wagon. $25. 213-378-5175. C

Rifle, .22 caliber Remington nylon 66, semi auto., case, cleaning kit inc., $35. 213-670-6084. C

Motorcycle, 1966 Harley Davidson XLCH, many extras, $1,050. 213-598-3072. C

Dust Cover, & walnut base for 50H or 40H Miracord turntable, $17. 213-379-6983. C

Guitar, Winston Folk, instruction book, $25. 213-372-1205. C

Mobile Home, Flamingo, 45′x8′, $2,000. 213-634-0601. C

Home, split level, lge. liv. rm., Los Feliz area, $39,500. 213-663-8883. C

Rug, leopard skin, w/full open mouth & felt backing, $350. 213-379-3487. C

Wiglet, frosted dark brown, 100% human hair, $17. 714-828-7867. C

Youth Bed, antique white, $10. 213-675-7316. C

Ironer, Kenmore w/chair, $30. 213-372-7875.

Mini Bike, 3 h.p., $110. 213-328-7571. C

Transmission, Powerglide, for 1950 - 1954 Chevrolet, completely rebit. w/guarantee, $75. 213-634-0601. C

Supercharger, for 1962 - 1966 Volkswagen, installation instructions, $100. 213-379-4807.

Mobile Home, 1956 Biltmore, 10x58, living rm. expando, 3 bdrms, 1½ baths, in Orange co., $500 down & take over payments. $4,700. 714-527-1966. C

House, 3 bdrm., 2 baths, family rm., cpts., dps., dble. gar., near Northrop Ventura, $17,995. 805-498-6298. C

Income Property, 4 duplex & owners single home & 10 garages on lot 66 x 300 near Northrop. Owner will carry loan at 6¾%. $61,500. 213-677-4388. C

Airplane, 1966 Cessna, 150 Com. Mark 12a, $6,200. 213-324-8437 or 213-770-1514. C

Shotgun, 16 gauge Remington Sportsman 48, modified choke, semi-auto., gun case & box of shells, $65. 213-751-6727. C

Uranium-Vanadium Properties, Sunset group (6 claims) southwest Gypsum Valley, Colorado, in Atomic Energy reserve, $45,000 with 10% royalty. 714-642-2616. C

Room Divider, with pole lamp & desk attached and three shelves, walnut finish, brass trim, $15. 213-675-9530. C

Two Waterfront Parcels, ½ acre each, NE Oregon, $2,750 each. 213-348-4874. C

Ski Boat, 14′, 40 hp Merc. engine, trailer, all ski equipment, $600. 213-673-2559. C

Shell, sequin hand knitted, never worn, size 16, blue, $20. 213-244-1793. C

Rug, 12′ x 15′, mixed green tweed, with pad. $60. 213-671-6592. C

Razor, Sunbeam Shavemaster, $12. 213-378-5175. C

Barbell, dumbell set, 150 lb., Healthways, $15. 213-670-6084. C

Car Cooler, 1-2 speed, $5. 213-644-3116. C

Chevelle Top Boot, 1964 model, red, never used, $15. 213-376-4677. C

House, 4-bdrm., 2 baths, 2070 sq. ft., $32,900. 213-889-0793. C

Ski Boat, 14′ fiberglass, 35 h.p. electric start Evinrude, tilt trailer. $495. 213-826-7074. C

Surfboard, 8′10″, $25. 213-325-2512. C

Miscellaneous For Sale

Honda CB160, dual mirrors, turn signals, chrome rack, 10,700 miles, $300. 714-774-4187. C

Trailer Hitch, chrome, for 1966 Rambler 9 passenger station wagon, $10. 714-635-3315.

Sailboat, 12′ sloop rig, firefly class, $595. 213-377-5862. C

Sailboat, 9½′ teacup, sandtrailer and car top accessories, dacron sail, $200. 213-321-1655. C

Parakeet, w/18″x45″ round cage, parakeet manuals, cage carpets, all accessories, $15. 213-534-2419. C

Trailer, terry travel 1962, 16′ sleeps 5, twin butane tanks, 3-way lights (12V-110V & butane), separate battery, $775. 213-422-0100. C

Home, Garden Grove, 4-bdrms, 2 baths, $2,000 down, $21,995. 213-676-4203, 714-839-1053, 213-581-5208. C

Home, 3-bdrm., near schools & shopping, 1 mi. to beach, cpts., $25,500. 213-374-2837. C

House, 1,200 sq. ft., cor. lot near schools, 3 blocks from Northrop, $26,500. 213-675-8888. C

House, 2-bdrm., $17,500. 213-671-8864. C

Outboard Motor, Mark 58, 45 electric Mercury, $225. 213-838-1926. C

Dumbell/Barbell Set w/130 lbs. of weights, $25. 213-363-6617. C

Sail, Spars, & Rigging for sailboat, complete w/conversion equipment, aluminum spars, s.s. rigging, dacron sail, $100. 213-831-9545.

Camping Table & benches attached, used twice, $12. 213-672-8468. C

Residential Lot, Palos Verdes Estates, $21,500. 213-541-1226. C

Engine, 1965 Falcon Econoline 6 and transmission, 3 speed, $150. 213-371-3473. C

Acreage, 2½ acres, near Lake Los Angeles, $500 dn., $20 mo., full price $2,500. 805-947-6900. C

Camper Jacks, never used, $45. 213-371-2948. C

Acreage, 5 acres in Antelope Valley, near Willow Springs, $3,500. $35 dn. & $35 per month, including 6% interest. 213-378-1026.

Hand Gun, 22 cal. Magnum, 2-shot Derringer, 1 box of shells, $17. 213-327-8927. C

Sail Boat, 14′, w/trailer, completely rigged, cover, sling, $995. 213-396-8314. C

Home, tri-level, 8 rm, 5-bdrm., 3 bth, fam. room, completely carpeted & custom draped, $49,950. 213-325-8913. C

5 Unit Apt. Bldg., 3 yrs. old, $435 mo. plus owner., $59,000. 213-676-5532. C

Parts for 1957 Plymouth, $56, or sell separately. 213-889-1442. C

Golf Balls, used, no cuts or cracks, all brands. 25¢. 213-670-6365. C

Pool Table, w/reg. size balls & 2 cues, $30. 213-671-0357. C

Gun, Remington 7mm, rolling block rifle, NRA, $19. 714-539-2098. C

Lots, two, side by side, 30′x80′ ea., Running Springs area, $500 dn., $1750 ea. or $1,500. 714-595-3013. C

Living Room Set, textured naugahyde, modern style, beige, $30. 213-539-2262. C

Home, 2-bdrm. & den, lot 50′x112′, 2 blks. west of Crenshaw Blvd., $19,950. 213-675-7724. C

Childs Dresser/Wardrobe, white with pink handles, $15. 213-326-1876. C

Bric-A-Brac Shelf, maple finished, $15. 213-322-9147. C

Home, 4-bdrm., 2¼ bath, w/w carpt, fam. rm. w/f/place, $31,000. 213-672-5108 or 676-0389. C

Pool Table, 7′ pressed wood, incl. everything, $75. 213-379-2554. C

Salton Sea Slip Lot, lot for house and separate boat dock on channel, roads and utilities included, south side of sea in Riviera Keys, $7,100. 714-535-1694. C

Home, 4-bdrm., 2 bths, fam. rm., corner, view; Palos Verdes Pen., near San Pedro, 4¾% G.I., $35,500. 213-377-8856. C

Vacuum Cleaner, Kirby, r/blt, $48. 213-323-4330. G

Color TV, Raytheon, 21″, $60. 213-430-7388. C

Astro Mag. chrome wheels for Mustang, never used, $125. 213-431-1797. C

Twin Beds, maple, 4-poster, good mattress for small children, $20. 213-329-4200. C

Mini-Bike, Taco-44, 3 hp engine, $95. 213-291-0025. C

Electric Guitar, amplifier, strap, cord, $80. 213-676-3379. C

Coffee Table, early American birch, $40. 213-671-8992. C

Radial-Arm Saw, 10″ Craftsman, w/adjustable steel bench and 2 blades, $160. 213-756-6216. C

Home, 4-bdrm. plus w/shop, corner lot, north Torrance location, 10 min. from Northrop, $27,900, 10% down. 213-329-3286. C

Guitar, Winstone Folk, $25. 213-372-1205. C

Organ, Conn elec., w/bench, $1,000. 213-675-0521. C

Boat, 16′ wood runabout, 30 hp Merc, $325. 213-324-3760. C

Cadillac, 1954, 4-door sedan, $175. 213-375-5513. C

Swimming Pool, Sears, 12′ dia., one yr. old, incl. filter, pump & accessories, $70. 213-644-1504. C

Surfboard, Con 9′4″, $55. 213-342-3295. C

Miscellaneous For Sale

Home, 2-story, 2 yrs. old, 4-bdrm., lge. fam. rm, $33,900. 714-842-2732. C

Fur Stole, 2 yrs. old, used only 3 times, $250. 213-326-2138. C

Home, Gardena area, 3-bdrm., fam. rm., 2 bth, $33,000. 213-327-0975. C

Electric Trains & accessories, $10. 213-430-2619. C

Outboard Motor, Evinrude, 1967, 10 hrs. running time, crusiday tank, $300. 213-369-2455. C

Land, 3-acre parcel from Spanish Land Grant, off Ortega Hwy., 8 miles from San Juan Capistrano, $4,000 dn., $14,000. 714-528-4553. M

Skin Diving Tank, 71.2, w/new valve, $20. 213-328-2159. C

Yamaha, 1964, 250 c.c., $250. $213-671-3704. C

Shoes, wing tip, 1 pair (black), size 9½, $10. 213-324-8618. C

Dining Room Table, walnut, w/4 chairs, seat 8, $25. 213-545-3495. C

Victory Sloop, 21′, #333, $1,700. 213-759-6634. C

Bed, dble, box spring & mattress, walnut head and foot board, $70. 213-644-3775.

Home, 3 bdrm., 1¾ bath, only 2 miles from plant, FHA or owner will finance at 6% and no points with 20% down, $30,000. 213-675-8829. C

Lamp Table, contemporary solid walnut, 32″ square, 21″ high, $20. 213-675-2331. C

Propeller for 50 h.p. Johnson or Evinrude outboard motors, O.J. bronze prop 12½x14, $15. 213-323-7544. C

Patio Awning, aluminum, 9 ft. x 14 ft., new, never assembled, $150. 213-589-9503. C

Wanted to Buy

Encyclopedia set, Americana, Britannica or Colliers. 714-633-4600. D

Boat Trailer for 17′ SK. 213-374-3702. D

Rifle, Winchester, lever action, saddle gun. 213-323-4257. D

Motorcycles, h/weight, any cond., must be low in price. 213-363-3843. D

Sewing Machine, hvy. duty, upholstering-type, must be reasonable. 213-393-5649. D

Tandem Bicycle, Schwinn. 714-524-0889. D

Book, "Aircraft Structural Analysis" by Mangurian and Johnston, will pay premium price. 213-370-0285. D

File Cabinet, 2-drwr. 213-326-7528. D

Motorcycle Trailer. 213-324-0366. D

For Trade

Dune Buggy, VW powered, trade for bustype vehicle. 213-322-7869. E

Free (To Be Given Away)

Springer Spaniel, male, 7½ yrs. old, field trial champion sire and background. 213-831-6567. F

Puppies, small mixed breed, 7 weeks old. 213-674-2379. F

Davenport & Chair, brown. 213-324-7059. F

Dog, mostly Labrador, black, 2 yrs., healthy, gentle w/children. 213-645-8611. F

T.V. Cabinet, projection-type, Tambour doors, mahogany. 213-375-5097. F

Dog, mostly labrador, black, 2 yrs., healthy, house broken, good for family. 213-454-5985.

Rentals Offered

Home, 2-bdrm., unfurn., duplex, carport, 2 blks. from Norair, $100 mo. 213-679-2121. G

Apt, 1 bdrm., furn., pool, bltins, custom drapes & carpets, Lawndale, $150/mo. 213-679-1680 or 213-670-6084.

Cabin, Lake Gregory Village area, sleeps 6, $25 w/end, $70 wk. 213-545-6313. G

Cabin, Green Valley Lake, $35 w/end, $55 wk. 213-320-2002. G

Home, 3-bdrm., 2 bths., fam. rm., G.E. bltins, dishwasher, $200 mo. 213-639-2880. G

House, 2-bdrm., lge. fenced yrd., single gar., liv. rm., cpts., dps., $40 mo. 213-679-2771.

Mt. Cabin, Green Valley Lake, $25 w/end, $45 wk. 213-324-0649. G

Apartment for rent or lease, nearly 2,000 sq. ft., 3-bdrm., 2 bths, f/place, builtins, carpets, drapes, fenced yard, 2 blocks from Northrop, $225 mo. 213-676-9802. G

Apt, 2-bdrm, deluxe furn., lge. pool, nr. El Camino, adults, $170. 213-329-5986. G

Vacation Cabins, Idyllwild, 1 & 2 bdrms., fireplace, stream, patios, $20 to $35 w/ends; $50 to $80 wk. 213-754-5288. G

Camping Equipment, 9x9 tent ($6. wk.) 10x12 tent, $12 wk.; stove, lantern, cats ea. $2.50 wk., 213-839-7145. G

Room, to single lady, $15 wk., avail., 1 September; references required; College Park area, Garden Grove; 213-676-7561 or 714-893-5571. G

Apt, 2-bdrm., unfurn., 2 children OK, 9 miles from Northrop, avail. after July 31, $95. 213-537-3098. G

Rentals Wanted

Garage for storage, vicinity of Hawthorne, Lawndale, South Bay. 213-679-7840. H

Lost

Glasses, ladies, horn-rimmed, new. 213-545-6847. J

Personals

My heartfelt gratitude & deep appreciation to all the friends at Northrop Nortronics of my late husband, "Robbie" Robinson, for their generous display of tribute, kindness & warm friendship. MAREN ROBINSON. L

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Western & 225th, Torrance. Alleene M. Mellen, Norair, exts. 2568, 2621. 213-320-7710.

Woodruff & Carson, Lakewood. A. B. Finken, Norair, 213-425-0695.

Sepulveda & National, Los Angeles. Douglas R. Burton, Norair, ext. 1992.

7:30 a.m. — 4:12 p.m.

Century & Western, Los Angeles. Jean Simpson, 213-755-8394.

Rides Offered

7:30 a.m. — 4:12 p.m.

Junipero Ave. & 10th, Long Beach. Carol Clement, Corp. Labs. ext., 2721, 213-434-9533.

Personals

I would like to express my thanks & appreciation to my friends & fellow employees for their kindness shown during the recent loss of my husband. AURORE C. RICHARDS. L

Sincere thanks to my friends for their kind expressions of sympathy in the loss of my father. JANIE PERRY. L

Sincere thanks to my friends at Northrop Ventura for their thoughtfulness & generosity during the recent passing of my father. RUSSEL MESSICK. L

We wish to express our gratitude for the flowers, cards & kind expressions of sympathy in the loss of our son & grandson. NANCY GIBSON & FAMILY & DICK TEUBERT. L

We wish to express our sincere thanks for the kind thoughts & deeds extended to us at the time of the death of our mother, Mrs. Gertrude Breneman. THE BRENEMAN FAMILY. L

I wish to express my sincere thanks for the kind thoughts & deeds extended to me at the time of the death of my mother, Mrs. Joie Marguerite Brown. CLARA ADAMS. L

My heartfelt thanks to all my friends at Northrop Ventura who were so kind to me in my recent bereavement. WILLIAM "BILL" HASSELL. L

For Sale or Trade

Movie Camera & case, Argus Super 8 model 820, 4 to 1 manual zoom lens, $60 or trade for drill press. 213-645-6211. M

Reflecting Telescope,, 10″ diam., up to 1000 power magnification, trade for tape recording, aquarium equipment, or musical instruments, hi-fi equip. 213-395-4801. M

Cabin Cruiser, 21½′ Chris Craft, Chrysler Marine, $1,500 or trade for desert property. 213-397-2906. M

HYPNOTIST

(Continued from page 4)

a certain product; the acceptance of an idea without knowing you've accepted it; these are examples. You should also learn how to dehypnotize yourself."

Dr. Harmon joined Northrop two and one-half years ago. He holds a bachelor of science degree in Physics, a master of science degree in physical metallurgy, and a doctorate in physical metallurgy, all from Case Institute of Technology in Cleveland.

At Norair he has coordinated development of graphite composites for aircraft structural uses.

Why do people enroll in the hypnosis class?

"I've had people come in for different reasons," Dr. Harmon said. "One man wanted to concentrate so he could make more money shooting pool. Others have wanted to increase their self-confidence, improve concentration in their work or in their studies, or overcome such things as nervousness or insomnia."

Attitude is one of the most important factors in hypnosis, Dr. Harmon explains.

"You have to be receptive—you can't fight it and achieve the same results," he said. "A negative attitude is the result of some negative item in the subconscious. An individual who feels he is getting 'bad breaks' will always be a loser, because he expects to lose. He'll find a way to defeat himself. You have to feel deserving."

Dr. Harmon's first class in Hawthorne was held in May and June. The second began on July 2, and will continue until August 6. The third will follow a week later.

Work Area Improvements Planned for Two Facilities

A long range plan to improve the working areas of Nortronics' employees has begun with an experiment in color at Anaheim.

As a starting point, Plant Maintenance, headed by Art Boston, has painted accent colors on several interior doors in the Y-1 Administration area. Tones of Harvest Yellow, Bittersweet (salmon), Eye Rest Green and Princess Blue decorate the entrances to the Compensation office area.

According to Merrill Skilling, chief plant engineer, the Anaheim Department will settle on four eye pleasing colors which will be compatible with one another and harmonious with any area color scheme.

Also at Anaheim, a Purchasing face-lift will result in a new lobby for vendors, experimental carpeting to replace old tile, and an open office feeling where cubicles once stood.

Elsewhere in the division, Hawthorne Facilities Engineering, supervised by Phil Engels, has opened a private employees' entrance on the front of the Johnson Building to speed foot traffic at peak periods and provide easy access to work areas. The main lobby has been refurbished with the accent on a color-coded decor.

Camper Loans Now Available At Credit Union

Loans for campers are now available to Nortronics, Norair, and Corporate personnel through the Northrop Credit Union following a recent decision of the Credit Union's Board of Directors.

Truck and camper must be financed together. Loans will be made up to 70 per cent of the new camper and new truck selling price for 36 months. Interest rate is ¾ of one per cent per month on the unpaid balance.

Loans for used campers vary. Interest rate is one per cent per month on unpaid balance. Minimum job tenure requirments for applying for camper loans is three months seniority.

The Credit Union, a nonprofit financial organization, offers loans for such things as automobiles and trucks; travel trailers and mobile homes; airplanes; home improvements; and second trust deeds. Personal loans are also available.

DRIVE-IN TICKET PLAN EXTENDED

An additional 3,000 discount tickets to Pacific Drive-In Theatres have been made available to the Northrop Personnel Activities offices.

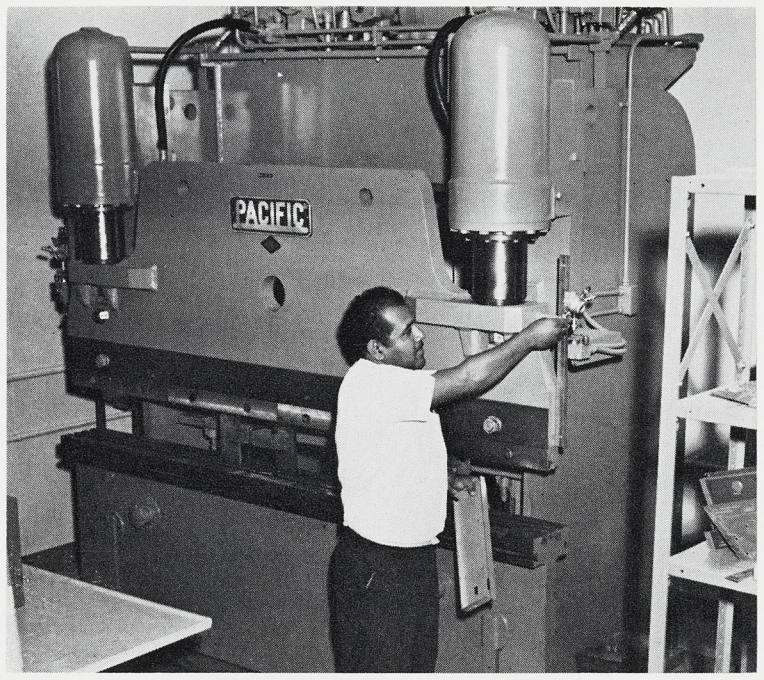
The special price of $1 is a savings of 50 cents per ticket on the regular adult admission. Children under 12 are admitted free.

Since the new service began in late May, Northrop West Coast employees have purchased 5,000 tickets at a total savings of $2,500. The tickets, which are good for any showing at anytime including weekends, will remain available as long as employees support the service.

CAMPOUT COMING UP

The Northrop Wanderers campout will be held at Point Mugu State Recreation area on August 9, 10 and 11. Camp fees are $1 per night. For reservations contact Ed Jaeger at Norair and Bill Shook at Nortronics.

There will be a camping club meeting on August 7 at 7 p.m. at the NRC Clubhouse, Hawthorne.



A HYDRAULIC PRESS BRAKE will greatly expand the capabilities of the Nortronics Hawthorne Sheet Metal Shop. John Espinoza, Manufacturing associate, checks out performance of the new machine prior to its operation on a regular basis.

Dr. Simecka Named Chief Scientist at Anaheim

Dr. William B. Simecka has joined Nortronics' Anaheim Department as chief scientist, reporting to Frank Lynch, vice president and Anaheim manager.

Dr. Simecka

Dr. Simecka comes to Northrop from the Air Force, where, since 1966, he held the position of chief scientist of the Air Force Armament Laboratory at Eglin Air Force Base.

He holds a Ph.D. in Mechanical Engineering from the University of California at Berkeley. He received his M. S. in Engineering from U.C.L.A. and his B. S. in Mechanical Engineering from Kansas State University.

Prior to his assignment at Eglin, Dr. Simecka served as Ordnance consultant in the Office of the Secretary of the Navy from 1964 to 1966. He began his career at the Naval Center at China Lake in 1951.

Dr. Simecka has an extensive background in the technologies related to the Nortronics Anaheim system and product activities.

FISHING TRIP OPEN

The NRC Deep Sea Fishing Club has 15 openings left for its albacore trip next August 17 aboard the Malihini 80 from San Diego. The price is $20.50 per person.

Additional information may be obtained from Ed Robertson, commissioner, on Anaheim ext. 318, or from John Gunderson, Anaheim ext. 682.

Hawthorne Adds Huge Press Brake

A new hydraulic press brake—which will help to improve lead time and reduce costs—has been installed by Nortronics in the sheet metal shop in Hawthorne.

Purchase of the brake—thus far the largest piece of equipment to be operated at the facility—is one phase of a move to expand both the capabilities and the scope of Fabrication Services. Within the next 90 days a punch press and a 12 inch shear will be set up in the Machine shop.

Stan Collins, general foreman of the Machine and Sheet Metal shops, says the new equipment will modernize the operation while keeping pace with the state of the art.

The new equipment will see much use through current and future application to chassis fabrication for both the C-5 and OMEGA programs.

DERBY WINNERS

The winners of NRC's June fishing derby were: first place, Stan Echland; second place, William Kron; third place, Chuck Fuller; fourth place, Don Caughlin and fifth place, Sam Murakami.

ASMS

(Continued from page 1)

tronics' Test & Programming group, has been assigned the additional duties of ASMS chief project engineer. He will report to D. T. Chung, director of Nortronics' Automation Systems section.

According to Frank Lynch, vice president and Anaheim manager, the opportunity to participate in the ASMS program opens up a new area for business in extension of the Anaheim department's established product lines.

VERSATILE, PLEASANT

Personnel Activities Girls Provide Many Services

"We're here to serve our employees."

That comment by Lore Krumreich succinctly states the basic duty of the four Personnel Activities girls in Nortronics' West Coast offices.

These four girls, who handle over-the-counter duties at their respective facilities, are the principal link between Personnel Activities organizations and Nortronics personnel.

Verda Campbell, Anaheim; Linda Chamberlain, Hawthorne; Joan Jones, Palos Verdes; and Lore Krumreich, Hawthorne, deal with thousands of people each year providing a range of services with the convenience of the employee always at heart.

They sell such things as Hallicrafters equipment, discount tickets and vitamins; send flowers to ill employees; help provide NORAID assistance and handle Credit Union services.

Mrs. Campbell, a 12-year Northrop employee, has been the Personnel Activities girl at Anaheim for 4½ years. She is noted for her skillful oil paintings of flower arrangements and plans to broaden her hobby to include landscapes.

Mrs. Chamberlain, with Nortronics for 2 years, enjoys water skiing with her husband on weekends and holidays. She was kind enough last year to volunteer to wear a clown costume and hand out gifts at the Northrop Christmas party.

Miss Jones says, "I do about everything." Along with selling tickets and discount cards, she assists in Employment activities. She says her six years at Northrop have been harried but enjoyable. Outside of work, she likes to paint with water colors and carries a 136 bowling average.

Mrs. Krumreich, an 8½-year Northrop employee, combines her Personnel Activities responsibilities with Industrial Relations duties. She serves Nortronics employees in Space Systems; Northrop Corporate Laboratories personnel; and Norair employees in the NCL and Administration Buildings.

She plays the piano and badminton in her spare time.

Miss Jones

Mrs. Campbell

Mrs. Krumreich

Mrs. Chamberlain

NORTHROP NEWS

NORTRONICS EDITION

Northrop Corporation, Beverly Hills, California Vol. 26, No. 16 August 14, 1968

Systems Labs Designing Primate Craft Prototype

The design of a demonstration prototype of the Orbiting Primate Spacecraft is currently under way in the Space Systems section of the Northrop Systems Laboratories in Hawthorne. The work—supported by Life Sciences of Northrop Corporate Laboratories—is a direct result of a recently awarded NASA contract.

The objective, according to Art Gandy, program manager, is to provide a technical demonstration prototype with integrated subsystems to form an environmental housing capable of sustaining a single rhesus monkey.

Upon completion, the unit will be interfaced with a similar prototype being built by Lockheed. The eventual result of the over-all NASA effort will be a flight carrying two unrestrained monkeys into space for an extended period and returned to earth for clinical studies.

The purpose of the program is to assess the effect of long term weightlessness on a relatively high order mammalian system. Hopefully, the studies will reveal, if any, certain subtle changes resulting from the absence of gravity.

The laboratory prototype is being designed and built, prior to building flight hardware, to evaluate the system using primates under isolated test conditions in a gravitational environment.

THIS SCALE MODEL of the Orbiting Primate Spacecraft which Nortronics is building for NASA is checked out by Dick Paramore (left), general supervisor of Engineering Development Support at Palos Verdes, and OPS Program Manager Art Gandy. The model has just been returned from an aeromedical symposium in Miami Beach.

ELEVEN TO RECEIVE SERVICE AWARDS

Eleven Nortronics employees are eligible this month to receive recognition pins denoting 15 years of service with Northrop.

In Anaheim, the awards will go to Joe Ikeda, Tool Manufacturing; Francis Latchford, jr., Tool and Cutter Grinding; William Lull, Support Estimating; Clyde Rvatti, Tool Manufacturing; and Matthew Williams, Machine shop.

At Hawthorne, pins will be presented to Robert Arrasmith, Facility Engineering; Alvin Eldridge, Field Services and Personnel Subsystems; Robert Hayos, Mariner '69 Program; and John Nikodem, Acceptance Test Inspection.

The Palos Verdes recipients are Richard Gibbs, supervisor of Quality Control, and Howard Luhmann, Electronic Assembly.

All began their careers in 1953.

Blood Donor Day Slated August 27

Blood donor day, now a semi-annual event at Anaheim, has been scheduled for August 27 from noon until 4:30 p.m., according to Esther Jones, R.N., Anaheim Medical unit.

The goal for the day is 200 signups. Those wishing to contribute may pick up donor cards from organization clerks or at the Medical department.

The Red Cross will operate a six-bed unit for volunteers in the southwest corner of Building Y-12.

Blood received from Anaheim donors is not only credited to the Anaheim department bank, but is considered to be in one's personal account as well.

Twelve Complete Anaheim Course; Get Certificates

Twelve supervisory employees at Anaheim have successfully completed a six months safety training course. All are members of the Supervisor's Safety Committee.

In presenting the certificates of completion, Frank Lynch, Nortronics vice president and Anaheim manager, said that Nortronics' primary concern is with the personal safety of each employee and to provide a safe place to work.

Mr. Lynch listed the dollar costs of accidents as secondary. His remarks included a challenge:

"Our goal at Anaheim is to effect a 15 per cent annual reduction in all injury accidents. Each line supervisor will be given a specific goal with regard to safety."

The course dealt with the basic areas and concepts of industrial accident prevention. The areas include the human element, personal protection equipment and safety dress, machine guarding and fire prevention and control.

This was the third such class to be completed at Anaheim. A fourth, to conclude next January, is now under way.

THESE SUPERVISOR'S SAFETY COMMITTEE members have successfully completed a six month safety training course and have been awarded certificates by Frank Lynch (left), Nortronics vice president and Anaheim manager. They are (from left) Ward Young, Ed Robertson, Whitey Pieper, Tex Robinson, Bill Perkins, Lee Mueller, Jack Kinzer, Jim Hock, Vic Hinojosa, Howard Brown and John Copeland.

Sixteen Receive Degrees Under Educational Plan

Sixteen Nortronics employees have received college degrees following personal studies which have been supported by Northrop's Educational Refund Plan.

Under the plan — long a tradition at Northrop—the company allows up to 100 per cent reimbursement for job related courses.

The degrees and their recipients are:

Juris Doctorate

Joseph Anderson, University of Southern California.

Master of Arts

James Birdsall (aerospace operations management), USC; and Melvin Ventura (business administration), Cal State at Fullerton.

Master of Science

Newton Alexander (mechanical engineering), USC; Frederick Beier (management), San Diego State; Stanley Requa (engineering), USC; and Warren Weimer (electrical engineering), USC.

Master of Business Administration

Michael Haas, USC; Charles Holmes (management), Cal State at Long Beach; William Kowaleski (industrial relations), Cal State at Long Beach; and John Simon (general management), USC.

Bachelor of Science

Ernest Blake (mechanical engineering), USC; Edward Horgan (electrical engineering), USC; John Larsen (engineering), Cal State at Long Beach; Robert Littell, Cal State at Long Beach; and Vincent Stagnaro (industrial technology), Cal State at Long Beach.

In commenting on the individual achievements of the graduates, Elmer Noonan, director of Industrial Relations, said, "All of us at Nortronics extend our congratulations to these men who have devoted many hours of their time to increase their knowledge. Their achievements are significant not only to them but to Northrop. The company will benefit directly from their newly acquired knowl-

(See DEGREES, page 6)

IN-PLANT REGISTRATION AVAILABLE FOR VOTERS

Northrop employees who are not properly registered to vote in the November general elections will be given special opportunities to do so at a number of Southern California plant locations.

Special registrars will be stationed at Nortronics facilities at specific times and dates.

The final day to register for the general election is September 12.

In order to vote, a person must be a U.S. citizen at least 21 years old, a resident of California for one year, the county for 90 days and the precinct for 54 days prior to the election.

A person must re-register if he does not have the right to vote for the following reasons:

1. Did not vote in the 1966 general election.
2. Newly moved into the state, county or precinct.
3. Changed name by marriage or other legal procedure.
4. Desires to change party affiliation for official records.

Registration schedule for Nortronics Division:

Anaheim—August 29, September 3 and 5, Building Y1 lobby; Building Y3, south entrance, inside; Building Y42 lobby.

Palos Verdes — August 29 and September 3, Building 2 lobby.

Hawthorne—August 28, 29 and September 3, Personnel Services, Column B-12.

NCL Building—September 3 and 4, Gate 10.

Hours at all locations will be 11 a.m. to 1 p.m.

NORTHROP NEWSMAKERS

Mr. Kayser

John Kayser, Norair industrial artist, has won first prize in the production illustration category of the annual TIMA industrial arts show.

His winning piece was a detailed schematic drawing of a T-38/F-5 wing casting. Mr. Kayser won first prize in the same category last year at the TIMA show.

* * *

Reverend John Chambers, Norair, and **Charles Zyetz,** Nortronics Hawthorne, reached an agreement—the Chambers' pet collie, Prince, will join the Zyetz household.

Prince has other ideas. He's pulled a "great escape" four times now to return home.

This week's Northrop News Classified section contains another Chambers offer to give Prince to a loving family, preferably in Anaheim or Thousand Oaks.

* * *

The 17-year-old daughter of a Nortronics Anaheim analyst has become the first entrant in the Miss Brea Beauty Pageant.

Miss Brooks

Carla Brooks, daughter of **Don Brooks,** Materiel Proposal analyst, will compete for the beauty title on September 7 at Brea's Civic Center Park. The contest is sponsored by the Brea Chamber of Commerce.

Miss Brooks, who is entering her first beauty contest, will appear in bathing suit and formal gown competition. Also, each girl will be judged on a talent presentation.

* * *

Younger A. Pitts has been named assistant to the vice president—Northrop International and manager of the Teheran office. Mr. Pitts will serve as Corporate Marketing representative for all operating elements of Northrop in Iran, Turkey, Lebanon, Jordan, Kuwait, Saudi Arabia and Pakistan. **M. C. Haenke** has returned for a new assignment with Northrop International.

J. R. Bruce, formerly director of Northrop's Houston, Texas, district office, is transferring his base of operations to the eastern regional office, Washington, D.C.

* * *

Effective September 1, **William Schumann,** west central regional manager, Oklahoma City, will assume responsibilities for serving the Houston-Dallas-Fort Worth areas.

* * *

Andrzej Wortman, Norair, has prepared an article titled "Aerodynamics of Randomly Tumbling Bodies" for publication in the AIAA Journal.

* * *

Richard W. Millar, a member of the Northrop Corporation board of directors since 1946, has been named to the board of trustees at Northrop Institute of Technology.

* * *

Sidney S. Lotz, director of Data Processing Operations at Norair, addressed a conference discussing "Managing the Modern Data Processing Department" in Los Angeles. The conference was given by the American Management Association.

* * *

Dr. William Ellet, director, Market Research and Analysis, has discussed "An Effective Merger and Acquisition Strategy" at a conference on "Mergers and Acquisitions" presented recently by the University of California at Los Angeles.

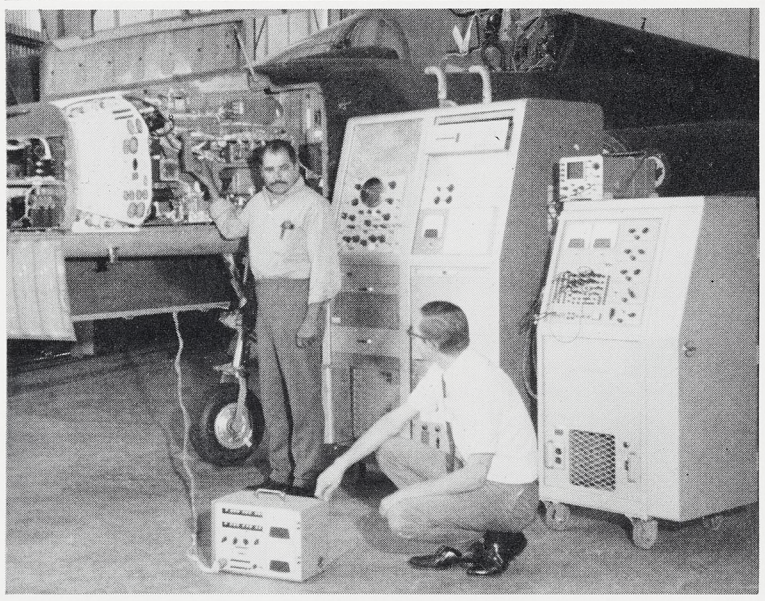
* * *

H. W. Deffebach has been appointed regional director for Latin America, responsible for marketing activities in that area. He will report to **C. R. Gates,** vice president of Northrop International.

Mr. Deffebach will be responsible for identification of Latin American markets and for overall planning and supervision for developing those markets.

Mr. Deffebach came to Northrop three years ago following a career in the U.S. Air Force. Most of his service was either in or involved with Latin America.

IS IT NEWS?
Ext. 4273
HAWTHORNE



ADVANCE OF TECHNOLOGY is strikingly illustrated in this picture of three pulse code modulation checkout units used over the past 10 years by Norair flight test personnel. Frank Villarruel (left), flight test technician, makes connections in aircraft with a new compact version of equipment which monitors flight recorder for checkout and calibration of transducers. Bruce Demo, flight test engineer, makes adjustments. Small model does same job as middle unit, developed 10 years ago, and unit at right, developed seven years ago.

BACK IN ACTION—Northrop F-5, one of 12 sent to Vietnam in the "Skoshi Tiger" evaluation, is back in service at Williams AFB, Arizona, after refurbishing at Norair. Major Robert Whitener, who flew the aircraft in Vietnam, shows Sergeant Alan Meston symbols of combat action collected during 725 missions.

Peruvian Aviation Study Undertaken by Northrop

Details of a contract to study and make recommendations in the field of commercial aviation in Peru have been announced by James L. Taylor, Corporate director of Operations Research Development Assistance Programs (ORDAP).

The contract was awarded to Northrop by the Peruvian Corporation of Airports and Commercial Aviation (CORPAC). It calls for "the performance of a study of revenue-producing services and administrative practices" of the agency.

The five-month program, which began May 15, is being conducted from Lima, Peru. A team of Northrop personnel, headed by Project Director Neils E. Sorensen-Viale, associate director of ORDAP/Latin America, has relocated to that city.

Others on the Northrop team are: Allan A. Burns and Bernard F. DaSilva of Norair, and George W. Bacon (Col., USAF, ret.).

Financing for the study was made available through a contract between CORPAC and the Export-Import Bank. The money is part of a larger loan to the Peruvian agency to be used in the financing of technical and economic studies of specific projects.

As in all such ORDAP programs, personnel from the host country are working with the Northrop team in the performance of the study. In this way on-the-job training is being provided for CORPAC members so they can carry out recommendations and future studies on their own.

"The most vital spot to concentrate is not where the laws are made but where the lawmakers are made."

—Raymond Moley, Newsweek

Page Wins New Pact In Vietnam

Page Communications Engineers has been awarded a $6,302,313 contract by the U.S. Army Electronics Command for maintenance and operation services on the IWCS Project in Vietnam.

IWCS is the Integrated Wideband Communications System installed in support of Allied military forces in Southeast Asia. IWCS totals approximately 470,000 circuit miles and constitutes the backbone of U.S. military communications in the Vietnam area.

The initial installation of the Vietnam portion of the IWCS was done by Page under a contract from Electronics Command based in Fort Monmouth, New Jersey.

PPD'S DART — New Dual-Axis Rate Transducer developed by Nortronics' Precision Products Department in Norwood is ready for marketing. Approximately the size of an "AA" flashlight battery and weighing about three and one-half ounces, DART has the potential of being even smaller. It is already smaller, lighter and less expensive than those of comparable performance. Instead of the heavy metal wheel in ordinary rate gyros, DART's sensing cell consists of long "paddle arms" rotating about an axis and suspended in liquid.

THE CONVENTION

Hoopla Hides Serious Party Work

(Editor's Note: Following is the fourth in a series of articles designed to acquaint Northrop personnel with America's two-party system; to encourage everyone to support his party and candidates, and then vote in the November elections.)

Most of us watch the national conventions of our political parties with indulgent, sometimes intense, affection because this is the World Series.

This is the time and place where long months of maneuver and counter-maneuver pay off in selection of the men who will fight it out for top offices in our land.

Though some may grumble about the infighting which goes on "behind the scenes" in the "smoke filled rooms," the convention is one of the highest expressions of the democratic process.

A presidential candidate eventually bubbles up out of the froth of hoopla and oratory.

Since 1832 when the Democrats nominated Andrew Jackson in Baltimore, the convention has been a boisterous showcase of politics. Hundreds of delegates mill around with brass band exuberance while the few great orators left in our society fill the convention hall and TV networks with a wash of sonorous words extolling the virtues of party, platform and candidates.

Although most of us consider the convention a legal part of the elective process, it is not. It has no legal standing under state or federal law but is simply representative of the sentiment of the political party staging the convention.

On the other hand, some states do regulate the selection of convention delegates. These are chosen, across the nation, by three methods: (1) primary election; (2) by state convention or (3) by party state committee. In some states, voters may state a preference for the presidential nominee along with naming delegates.

Despite the carnival atmosphere (we have already seen the Republicans in action at Miami and the Democrats begin in Chicago August 26), the national convention is a very serious working session leading up to the dramatic high point of polling delegates for the presidential nomination. The five basic purposes of both conventions are these:

1. To adopt a national party platform;
2. To nominate a candidate for president;
3. To nominate a candidate for vice president;
4. To elect a new national committee to serve until 1972; and
5. To adopt rules for allocating delegates for the 1972 convention.

Much of the basic work the average American does not see. However, 200 million of us now can take part in the national conventions by the marvelous medium of television though our vision may be limited at times to the orators, the news commentators, or television cameramen taking pictures of other television cameramen.

When the final "Mistah Chairman, the State of Blank casts blank votes for Mr. Blank for president" has sounded, the brass bands go to work. Finally, the convention hall once more is reduced to an empty, echoing pavilion littered with waste paper and old campaign slogans.

Then the work has just begun. From that moment on thousands of people and millions of dollars are swept up in the final contest leading to a decision of the people and by the people on November 5.

(NEXT: PARTY PROBLEMS)

Birth of a Target Drone—The Navy MQM-74A

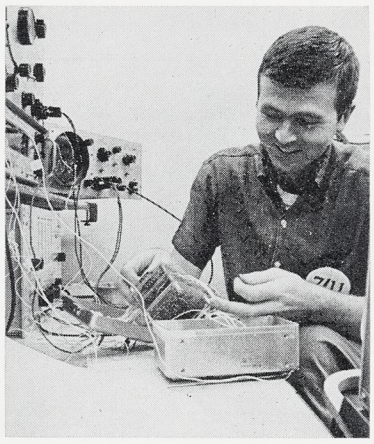
MOMENT OF TRUTH—George Boren (far left) of Northrop Ventura oversees preparation of turbojet-powered MQM-74A by government and Navy personnel for demonstration flight. Drone will undergo flights at Point Mugu, California and Dahlgren, Virginia.

Northrop Corporation is experiencing an unprecedented period of growth—in product lines, new facilities and, above all, new personnel.

Because many employees are familiar with only a small segment of Northrop's total capability, Northrop News is introducing a new feature on this page.

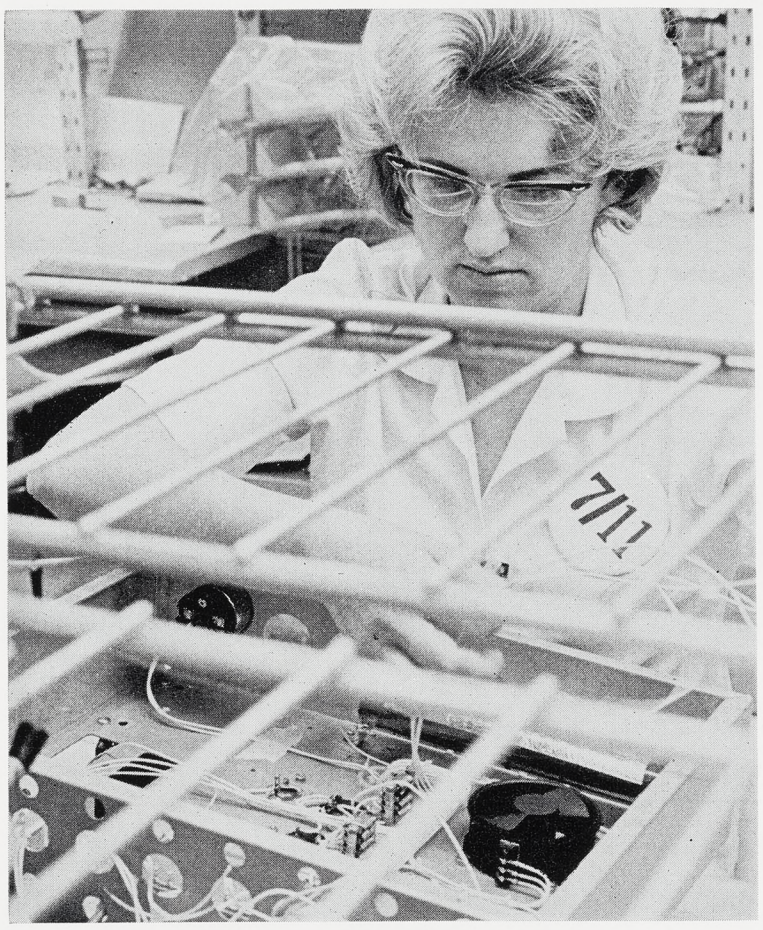
It is a pictorial visit with the master craftsmen who create, produce and service a Northrop product. Other groups and products will be presented in future issues.

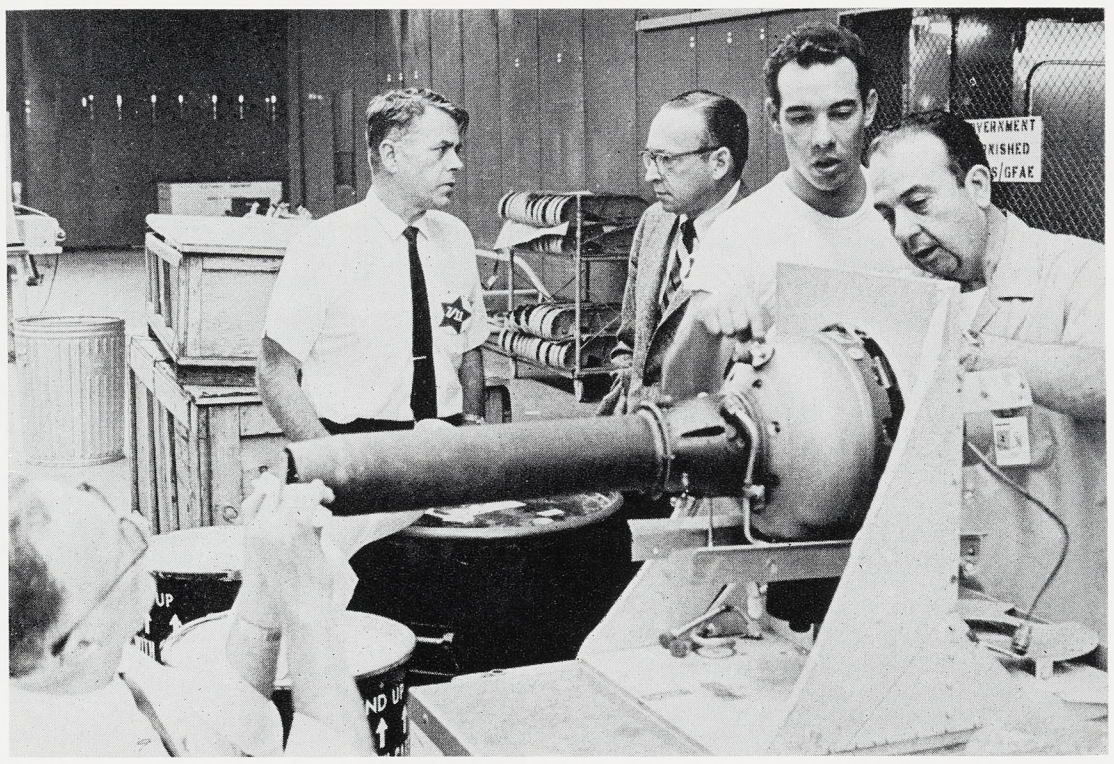
Northrop Ventura is the world's leading producer of unmanned radio-controlled aircraft. Sixteen nations now utilize Ventura-built drones.



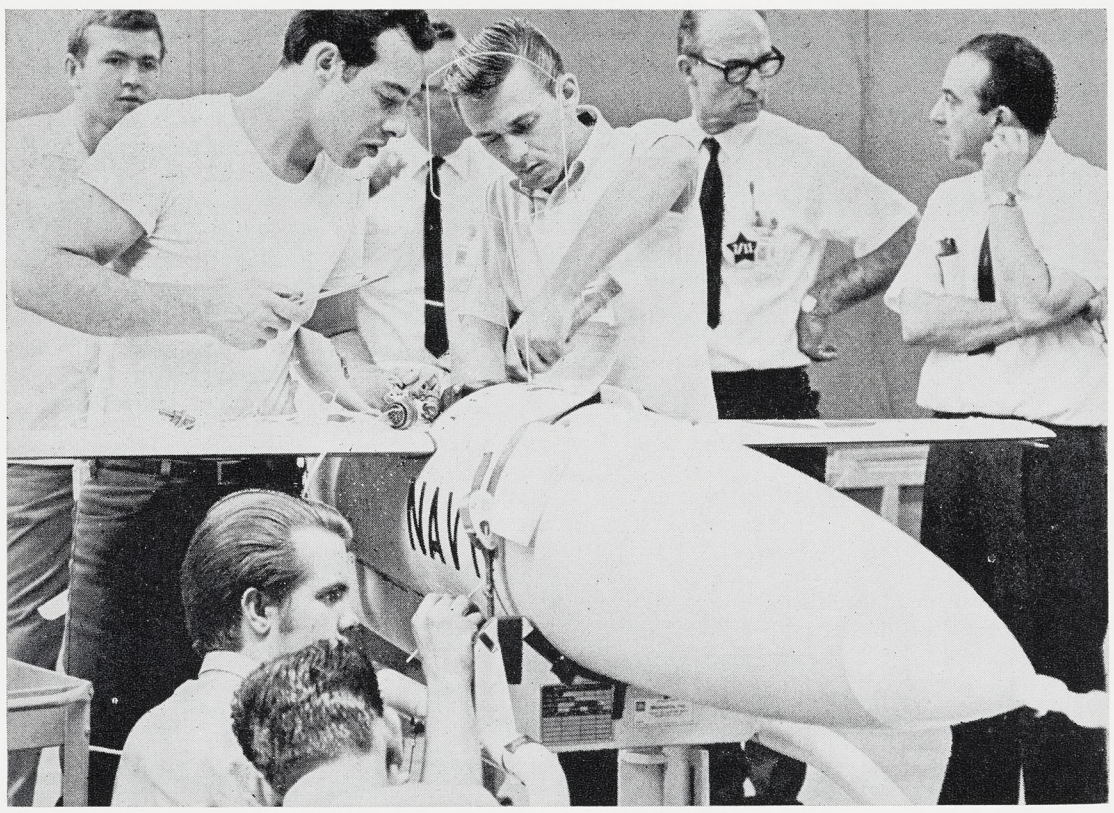
Patience, skill is needed not only in the actual assembly of the drone aircraft, but also in the meticulous test operations which involve components of the vehicle's various systems. Here, Ventura employee Dennis Sperry runs through a checkout of the MQM-74A signal conditioner.

Photos by Bob Thornton





VITAL FABRICATION work is done by Pat Smith (left-hand picture) as she assembles battery charger for drone. In picture above, personnel concentrate on engine buildup while Richard Warner (left, background), product chief, confers with M. A. Maurer, Ventura vice president and manager of Production Operations.



STRUCTURAL WORK—Ventura Manufacturing employees put final touches on aircraft with paint touchup and nose-to-aft wiring operations in photograph above. Lee Bradley (right) fits fiberglass tail reflector on target in assembly area of Ventura's Conejo Valley plant. Over the past 30 years, Northrop Ventura has delivered more than 70,000 drones.

WHAT DO YOU THINK?

Of Changing Certain Holidays To Have Them Fall on Mondays

Mr. Cornelius

Bob Cornelius, foreman, Nortronics Anaheim:

With certain holidays I approve. Holidays of special significance such as Christmas, Thanksgiving, Fourth of July, I don't approve. I don't think that holidays of religious or patriotic significance should arbitrarily be designated or changed. Artificial holidays such as Veterans Day, Columbus Day, should be changed if they appear on a Sunday.

Miss Korek

Sandy Korek, secretary, Northrop Corporate Laboratories:

I think it's a good idea. It makes nice long weekends. I think people like a three-day weekend. I'd rather have Monday off than Friday. It's harder to start the week than to end it. I like to postpone it as long as I can.

Mr. Brown

Bob Brown, mechanic, Norair:

I don't like it. Why should we celebrate the Fourth of July on the sixth if it doesn't happen to fall on a Monday? If they decide to do this, I'd rather have holidays fall on Friday than on Monday.

Mrs. Krall

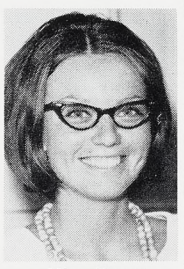
Betty Krall, receptionist, Corporate office:

I would think that holidays which have a specific meaning to our United States should remain on the date that they represent.

Mr. Anderson

James Anderson, senior engineer, Nortronics Hawthorne:

Sure, so you can have a three-day holiday instead of a day off in the middle of the week. This way you don't have to work on the days before and after the holiday. It doesn't bother me that certain holidays will no longer be celebrated on their original dates.



Miss Young

Cathy Young, Personnel Activities, Norair:

As far as getting three days off I think it's great, especially if you are going out of town. But I think it sounds kind of weird to be changing holidays around. However, it doesn't bother me that certain historical holidays will no longer be celebrated on their original date.

TIGHT SQUEEZE—Northrop Ventura's William Brooks gets an assist from his father, Rowan Brooks, as he prepares to execute his famous trunk escape act during "Baffling Brooks" magic team performance.

AERIAL COMMUTERS FIND

No Bumper-to-Bumper Traffic Aloft

Three Hawthorne employees have done something about the frustrations of bumper-to-bumper freeway traffic and street snarls by taking to the air. When weather permits, Sheldon Bresin, Don Domeyer and Fred DeNuccio regularly pilot their privately owned airplanes into Hawthorne Municipal Airport. They are full-fledged air commuters who prefer flying to work every day.

They are often accompanied by other Northrop employees who are not just along for the ride, but also consider it a better route to work.

Mr. Bresin, a systems engineer in the Norair Advanced Design department, has been flying to Hawthorne from his home in the City of Orange for about five years in a Cessna 140. He has commercial, instrument and instructor certificates for single and multi-engine aircraft. He has IFR (instrument flying rules) capability and therefore makes it to Hawthorne by air all but a very few times during the year than visual rated pilots, making regular airborne commuting practical.

Mr. Domeyer, a Manufacturing Control analyst at Norair, has had his pilot's license since 1962 and is now working on his commercial multi-engine instrument rating. His plane is a four-place Stinson Voyager. Don most often carries George Walton, Norair Manufacturing Control supervisor, or fellow Norair Manufacturing Control Analyst Bob Monte as passengers.

Mr. DeNuccio, a Nortronics Manufacturing project engineer, is usually accompanied by Olie O'Laughlin, a Nortronics Manufacturing engineer. They fly into Hawthorne in Fred's two-place Cessna 140. Fred has figured — and the others concur — that there is a slight savings in the daily cost of flying to work as opposed to driving.

For example, it costs Fred about $2 to drive his 1963 Pontiac on the 60-mile round trip between his home in Huntington Beach and his desk in Hawthorne. Fred's Cessna will do the same job quicker for around $1.50. But, there are tie-down fees at airports which boost the over-all cost.

Nonetheless, all concerned would rather fly than drive, even if the cost were the same or slightly higher.

"The comfort factor is certainly to be taken into consideration," said Fred, "and no price can be placed on that."

Cruising at 90 to 110 miles per hour is a lot cooler and at least two-thirds quicker than by car.

READY TO BOARD a pair of Cessna 140's at Hawthorne Airport are (from left) Fred DeNuccio, Olie O'Laughlin and Sheldon Bresin. Less than 30 minutes later, the trio touched down near their homes in Orange County. All agree the airways are less congested.

WITH ESCAPE TRICKS

'Baffling Brooks' Mystify Audiences

Virtually everyone has experienced difficulty packing a suitcase for a business or vacation trip. There's always an item that won't fit.

Imagine, then, how William Herbert Brooks of Northrop Ventura must feel.

As half of the "Baffling Brooks" magical team (his father, Rowan Brooks, is his partner), he must squeeze himself into a trunk which measures only 17 by 19 by 31 inches. Mr. Brooks is 5 feet 10, and weighs 145 pounds.

Still, getting into the trunk isn't the problem. Escaping from it is his specialty. He does this so well that he was presented a major award this year following a charity performance by the Society of American Magicians.

After the trunk is locked and hinged on all sides, it is wrapped in a canvas cover, and laced tightly. It is then wrapped in heavy rope on all sides, and a curtain descends upon the stage.

Within half a minute or so, the younger member of the Brooks team steps through the curtain and reveals the trunk—still sealed, wrapped and tied.

How does he do it? Naturally, he won't say.

"My grandfather, Herbert Brooks, had the trunk made in England in 1910 for a performance before King George V," Mr. Brooks said.

"It weighs 175 pounds, and is constructed of solid steel. My grandfather had a standing offer of £20,000 to anyone who could escape from the trunk. Nobody ever made it, and my grandfather's friend, Houdini, wouldn't even attempt the trunk escape."

Herbert Brooks died in 1926 when his son, Rowan, was still a child.

"My grandfather never taught my father any magic tricks," William Brooks said, "because he didn't want him going into the business. He thought it would be better for him to establish a career in a more conventional line of work."

Still, Rowan Brooks became fascinated with escapes, illusions and the other mainstays of the magician's trade.

"When I was old enough, dad allowed me to perform with him," William Brooks said. "We've been working together now for about 15 years."

Mr. Brooks is an area dispatcher on the Boeing 747 Program at Ventura. He joined the company last November.

They often appear at the Magic Castle in Hollywood; a club founded exclusively for magicians and other show business entertainers.

Mr. Brooks roller skates and swims to maintain the dexterity and coordination needed for his work in magic.

"I'd be in trouble if I ever put on weight," he said. "At 155, I could still do the trunk escape, although I'd be slow. At 165, I couldn't even get into the trunk."

William Brooks, his wife, Sandy, and three children live in Oxnard. The oldest child, 7-year-old Kenny, is enthusiastic about his father's work in magic.

TEACHERS TOUR

Eleven teachers and counselors from the 1968 Vocational Guidance Institute, held this year at UCLA, toured Norair and attended a session on Northrop's efforts in the employment of minority group members.

Northrop is a sponsor of the institute which is one part of a Los Angeles area effort to create better lines of communication between the business and minority communities.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Mercury, 1962 Monterey custom, 4-dr., 51,000 miles, fact. air, $795. 213-629-4111, ext. 1373. A

Austin Healey, 1960, 3000 dlx., wire whls., o/drive, AM-FM, new top, $850. 213-370-8958. A

Race Car, ¼ Midget, milled head, lge. valves, $125. 213-676-6415. A

Chevrolet, 1963, Biscayne, 4-dr., auto., $650. 213-320-3529. A

Ford, 1961, Starliner, 352 V-8, auto., $440. 213-644-6733. A

Mustang, 1967, GT, fastback, 390 eng., 4-spd., air, disc brakes, $2,900. 212-323-4257.

Volkswagen, 1966 fastback, 1600 series, r/h, fact. air, $1,595. 213-329-1905. A

Station Wagon, 1958 Chevrolet Nomad, new paint, trans. o/haul, $350. 213-326-7528. A

Chevrolet, 1957 convt., std. stick, r/h, needs top, $195. 213-377-4251. A

Mustang, 1967 convt., V-8, auto. trans., p/s, p/disc brakes, new tires, $2,350. 213-377-9666. A

Pontiac, 1965, Grand Prix, full power, a/c, vinyl top, $2,295. 213-373-3639. A

Dart, 1964 GT, 4-spd., r/h, 46,000 miles, $950. 213-372-5367. A

Pontiac, 1963, LeMans, b/seats, 8 cyl. eng., r/h, auto. trans., $650. 213-370-0733. A

TR-3, 1959, r/h, new tires, tonneau, $795. 213-379-5053. A

Chevrolet, 1952 coupe, 2-dr., stick shift, $125. 714-962-7808. A

Station Wagon, 1958 Mercury, $150. 213-676-4746. A

Austin Healey Sprite, 1961, recent o/haul, new tires, brakes & clutch, $700. 213-671-0925. A

Station Wagon, 1962 Oldsmobile, full power & air, $850. 213-731-2964. A

Toyota, 1967 Corona, 2-dr. h/top, less than 20,000 miles, auto., $1,985. 213-532-7717. A

Tempest, 1963 cpe., 4 cyl., stick, r/h, new tires & batt., $475. 213-375-8804. A

Falcon, 1962 4-dr., r/h, $350. 213-676-7763.

Chevrolet, 1965 Biscayne, 2-dr., 6 cyl., auto. trans., $1,000. 213-541-1423. A

Corvette, 1964 fastback, extras, $2,300. 213-673-4280. A

Barracuda, 1967, 273 V-8, a/c, p/s, r/h, $2,250. 213-473-1014. A

Chevrolet, 1957, 2-dr., 400 h.p. eng., stick shift, $500. 213-675-8421. A

MGA, 1962, new clutch & trans., $900. 714-838-7523. A

Pickup, 1957 ½ ton Chevrolet, reblt. 283 eng., trans., gen., new clutch, $495. Box 1601. A

Caprice, 1966, p/s, rear spkr., auto., 22,000 miles, $458 dn., $2,000; Le Mans, 1964, a/c, 3-spd., 2-dr. h/top, $1,090. Northrop Credit Union, ext. 1117. A

Camper, 1963 Tropicana, 8′ cabover, fully equipped, jacks & dolly incl., $700. 213-374-6841. A

Oldsmobile, 1968 442, p/s, p/b, Turbohydro. suspension, posit., $1,000 dn. & take over $88 mo. pymts., $2,600 approx. bal. 213-838-5810. A

Chevrolet, 1959, 6 cyl., p/s, 4-dr., $195. 213-645-2665. A

Pickup, 1967 Datsun, ½-ton, w/camper, $1,650. 805-482-0122. A

Peugeot, 1959, near new tires, brakes, $250. 213-326-6195. A

Pontiac, 1968 Firebird 400, $3,500. 213-696-9438. A

Buick, 1963 Skylark convt., $825. 213-378-3600. A

Volkswagen, 1957, needs eng. & body work, $200. 213-281-5948. A

Station Wagon, Dodge, 1961 Lancer 225, air, stick, $250. 213-597-2260. A

Chevrolet, 1958, 2-dr. sed., 348 cu. in., auto. trans., r/h, p/s, p/b, $200. 213-676-9736. A

Station Wagon, 1959 Rambler, auto. trans., r/h, $150. 213-323-9932. A

MG, 1952 model TD midget, new top, good tires, high compression Epoloy pistons, needs paint, ring & valve, $500. 213-630-4188. A

Datsun, 1967 1600 sport roadster, hard & soft tops, 18,000 miles, 4-spd. stick shift, $1,950. 213-675-8044. A

Household Items For Sale

Bedroom Set, dresser, bed & night stand, springs & mattress, $100. 213-861-3847. B

Cedar Chest, Lane, blonde, $25. 213-547-4689. B

Water Heater, elec., 220V, 40 gal. capacity, $15. 805-495-9647. B

Living Room Set, 2-pc., & matching tables, $300. 213-675-8829. B

Household Items For Sale

Vacuum Cleaner, Electrolux, w/attach., new motor & hose, $85. 213-326-2138. B

Bed, Simmons Beauty Rest, $70. 213-377-7317. B

China, English Spode, 8 place settings, many extras, $75. 213-378-2564. B

End Tables, w/drawers, Founders oiled walnut, $20 ea. 213-326-0340. B

Coffee Table, contemporary, solid walnut, 60″x22″, $40. 213-675-2331. B

Refrigerator, 11 cu. ft., Admiral, 2½ yrs. old, $95. 213-534-3410. B

Range, RCA Estate, gas, auto. timer, b-b-que, broiler, $40. 213-589-9503. B

Hide-A-Bed, Simmons, beige Naugahyde, $50. 213-645-7484. B

Hide-A-Bed, early American, brown tweed, $75. 213-671-8992. B

Bookcase, walnut, 6-shelf, pole type, $15. 213-346-3751. B

Stove, 4-burner, gas, oven, griddle, broiler, $25. 213-679-2771. B

Refrigerator, Coldspot, $45. 213-545-3495. B

Rug, 9x12, brown, & pad, $5. 213-671-6592.

Washer & Dryer, Kenmore, matched set, $150. 805-498-6298. B

TV, Zenith 19″ portable, b&w, rolier stand, $60. 213-645-8004. B

Dinette Set, 42″, round table & 18″ leaf, 4 chairs, $50. 213-675-1953. B

Air Conditioner, G.E., window type, 11,000 btu rated, 120V., 4 yrs. old, $100. 714-535-3723. B

Piano, Yamaha grand, 5′8″, 3 yrs. old, $1,795. 213-662-0429. B

Dishwasher, G.E. Mobilmaid, $65. 213-679-1924. B

Bed, dble., 1 yr. old, $35. 213-324-7572. B

Cabinet, 39x19x30″ high, antiqued blue, 2-shelf, $25. 213-541-1568. B

Refrigerator, $10. 213-674-5503. B

Washer & Dryer, matched set, Lady Kenmore, elec., $150. 213-375-4108. B

Stove, apt. size, 4-burner, $20. 213-326-5448. B

Washer, General Electric, $15. 213-644-2607.

Air Conditioner, Welbilt, & kit, 8,300 btu, $86. 213-372-8502. B

Crib, hi-chair, wood, $10. 213-378-1863. B

Mixer, Sunbeam, elec., seldom used, $20. 213-758-9182. B

Refrigerator, 12 cu. ft. Hotpoint, coppertone, 2 yrs. old, $75. 213-541-1226, 213-671-0226.

Stove, gas, 40″, white, $50. 213-671-9598. B

Hi-Chair, all metal, folding w/locking tray, $6. 213-835-3869. B

TV, color, 23″ Admiral console, AM/FM stereo multiplex, $650. Box 1602. B

Chair, Danish modern, $5. 213-329-9982. B

Miscellaneous For Sale

Bicycle, girl's 26″, Monarch, $25. Box 1603.

Gun, Springfield, 30-30 bolt action, clip holds 3 shells, 2½ boxes of shells, 4 yrs. old, $45. 714-635-8294. C

Acreage, 2 acres, level, in Sand Canyon, oak trees, low dn., $24,000. 213-675-4156. C

Lawnmower, F&N reel, Briggs & Stratton, adj., $50. 213-321-0020. C

Motorcycle, 1966 Honda, 250 Scrambler, custom access., $350. 213-376-3525. C

Sailboat, 28′ sloop, sleeps 4, inbd. eng., main, jib, genoa & spinnaker, $5,000. 213-378-4352. C

Mini-Bike, Rupp, 2½ h.p., $135. 213-542-2638. C

Horse, 8 yr. old gelding, experienced rider only, ½ arab & ½ quarter, $400; w/tack, $550. 213-834-7535. C

Motor, ¼ h.p., filter, 15′ dia. frame, 3 yr. supply of chlorine & plastic pool, $35. 213-349-6854. C

Mower, rotary type, 4-cy. B&S eng., $15. 213-537-3098. C

House, 4-bdrm., 2 baths, fireplace, bltins, cpts., dps., finished 2-car gar., 20 min. to Northrop, $30,500. 213-325-3803. C

Home, 5-bdrm., a/c, 3-car gar., u/ground util., 600 sq. ft. covered patio, landscaped, sprinklers, fences, cpts., dps., $38,000. 213-889-8075. C

Pups, miniature dachshund, 2 AKC reg. black & tan males, $100 ea. 213-320-6388.

Motorcycle, 1959 Triumph Bonni., custom street built eng., $950. 213-379-7407. C

House, 2-bdrm., cpts., many extras, 10% dn., $17,500. 213-671-8864. C

Encyclopedias, Funk & Wagnall, $15. 213-675-7316. C

Regulator, U.S.D. Calypso, for skin diving equip., $56. 213-328-2159. C

Volleyball, 12-panel leather, $8. 213-374-2940. C

Reels, salt water type, $5 ea. 213-430-2619.

Tube Checker, B&K mutual conductance check, $40. 213-430-7388. C

Outboard Motor, Atwater-Scott, long shaft, 10 h.p., $75. 213-838-1926. C

Swimming Pool, 24′ round Doughboy, $45. 213-324-3760. C

Revolver, Husquarna-Nagant, 7.5 mm, 30 cal., NRA v.g. w/ammo, belt & holster, $25. 714-539-2098. C

Drafting Board, 31″x42″, all wood, on sturdy base, completely adj., $12. 213-670-6084. C

Crutches, adj., orthopedic, $5. 213-372-7875.

Boat Mold, 16′ female, deck & hull, $300. 213-679-7840. C

Miscellaneous For Sale

Lawnmower, power, reel type, Briggs & Stratton, 4-cy., gasoline eng., $18. 213-363-6617. C

Camper Jacks never used, $60. 213-371-2948. C

Ski Boat, 16′, new paint, 35 h.p. Evinrude, w/elec. starter, trailer, $550. 213-675-6482.

Tool Boxes, 2 & tools, scales, surface gauges trammel points, protractors, dividers, $60. 213-324-7059. C

Boat, folding-type, w/sails 14′ rubberized canvas, $300. 213-826-7074. C

Weightlifting barbells, complete set, $10. 213-377-5936. C

Lawnmower, 16″ Craftsman, w/catcher, $7. 714-527-6836. C

Barbell Set, 120 lbs., $15. 213-451-5330. C

Afghan, Norwegian stripes, beige background, 51″x64″, $20. 213-670-2564. C

House, 4-bdrm., 2-baths, 15 min. to Northrop, $27,000. 213-320-6975. C

Wedding Ring set, his & hers matched, $100. 213-675-6186. C

Acreage, 7½ acres, near Victorville & Feather River Lake, $500 dn., $50 mo., $5,750. 213-327-8046. C

Bicycle, girl's late model 26″ Schwinn, w/rear baskets, $25. 714-530-1734. C

Home, 3-bdrm., 2 fireplaces, rec. rm., laundry, 2 baths, cpts., dps., covered patio, concrete blk. fence, approx. 2,000 sq. ft., $27,500. 714-772-9477. C

Tent, 9′x12′ w/sideroom, $25. 213-541-1123.

Organ, Doric solid state, portable, band style, 5 octave keyboard, carrying case & Gibson reverb. amplifier, $400. 714-637-3278.

House, 4-bdrm., 1¾ bath, dps., cpts., bltin stove, oven & d/washer, newly painted, 5 min. from Northrop Hawthorne, $27,950. 213-324-8464. C

House, 3-bdrm., 1¾ baths, close to freeways, in Santa Fe Springs, $19,950. 213-864-7560. C

Utility Trailer, 4x8, $125. 213-326-1409. C

Sailboat, 11′ centerboard, $350. 213-325-7705. C

Home, 3-bdrm., 2 baths, elec. bltins, golf & c.c. area, high desert w/membership avail., will FHA w/large loan commitment, $18,500. 714-244-9283. C

Boat, 18′ Cruizon, inboard, util. hull glass on wood, lge. whl., all steel trailer, 292 cu. in. Ford eng., $1,300. 714-962-0932. C

Stove, 2-burner Coleman, $8. 213-644-3116.

Camera, Rolleiflex f3.5 w/integral light meter, leather case, $140. 213-645-8635. C

House, 3-bdrm., 2 baths, w/marble & ceramic tile, new cpts., enc. patio, close to Del Amo shopping center, $27,500. 213-325-3724. C

Movie Projector, Bell & Howell, 8mm, auto. threading, $50. 213-675-8390. C

Pups, German shorthaired pointer, AKC, field champ. line, $75. 805-642-4888. C

Aircraft, 1966 Cessna 150 com. Mark 12A mkr., 500 s.m.o.h., $5,900. 213-770-1514, 213-324-8437. C

Archery Equipment, complete, bow, 45 lb., target, $35. 213-371-5123. C

Acreage, 2 commercial acres on Highway 41 near Yosemite, leveled for building, $9,500. 213-675-7982. C

Trailer Hitch, Reese Strait Line, frame mount, w/sway control bars, elec. brake control & hyd. brake slave cyl., $75. 213-644-2401. C

Home, 3-bdrm., 2 baths, walk-in closets, stone fireplace, fam. rm., breakfast bar, all elec. kitchen, 10 min. to Northrop Ventura, cpts., dps., $28,500. 805-495-3996. C

Poodle, mini-toy, 4 mos. old, AKC reg., male, cocoa, $60. 213-375-5885. C

Tape Recorder, portable, Olympus Pencorder, ear phones, microphone, leather case, instruction book, $75. 213-676-3050. C

Mobile Home, 1961, 10x55 General, eastern made, expando living rm., $3,500. 213-324-5878. C

Bicycle, Schwinn, 10-spd., Derailleur, varsity racer, $35. 213-756-6216. C

Dog Pen, 10′9″ x 11′9″, 6 mos. old, provision for dble. gate, $90. 213-335-3229. C

Sailboat, 9½′ Teacup, dacron sail, cartop access., sand dolly, $200. 213-321-1655. C

Motorcycle, Honda 90, $125. 213-375-7038.

Block Maker, cement, w/several forms, elec. motor, $125. 213-375-1735. C

Poodle, toy, female, 4 wks. old, $35. 714-528-9227. C

Sandsailer, custom blt., sloop rig, front steering, $145. 213-377-5862. C

Home, 4-bdrm., 2 baths, 8 yrs. old, 5¼% G.I. financing, $38,000. 213-676-5425. C

Filing Cabinet, 2-drwr., metal, w/safe, $29.50. 213-679-6256. C

Ski Boat, 1967 Glasspar, 14′, G3, 80 h.p. Johnson motor, b/b seats, many extras, 8 mos. old, $1,650. 213-679-8583. C

Acreage, 5 acres in Antelope Valley near Rosamond, $45 dn., $45 mo., no interest, $4,500. 213-378-1026. C

Cemetery Lots, Terrace of Faith, Rose Hills, $200 ea. 213-867-0662. C

Sloop, Excalibur 26, fully equipped for racing/cruising, $2,500 for ⅓ partnership or dn. pymt., $7,500. 213-323-8331. C

Slide Rule, Dietzgen, case, $18. 213-675-5258. C

Home, 4-bdrm., 2-car gar., w/shop, new roof & cpts., 10% dn., N. Torrance, $27,900. 213-329-3286. C

Land Parcels, 2, on waterfront, ½-acre ea., power in, N.E. Oregon, $2,750 ea. 213-348-4874. C

Miscellaneous For Sale

House, 2,000 sq. ft., 5-bdrm., 2 fireplaces, cpts., dps., f/a heat, all bltins, dble. car gar., b/wall fence, 12x22 covered patio, 4 yrs. old, ½ mile off San Diego Fwy., G.I. at 5¼%, $35,500. 213-644-6270. C

Honda, 1965 305, take over $23 mo. pymts., $350. 805-495-8977. C

TV, b&w, 18″ Emerson, portable, UHF 1964 model, $45. 213-676-6661. C

Honda, 1967 305 Scrambler, new rear tire & batt., $495. 213-375-9836. C

Go-Cart, 6 h.p. w.b. 2-cycle eng., live axle racing slicks, mag whls., 15 hrs. on eng., $100. 213-645-3381. C

Tape Recorder, 4-track, stereo, Webcor, $85. 213-329-1705. C

Home, Gardena area, cutsom landscaping, 3-bdrm., fam. room, 2 baths, $33,000. 213-327-0975. C

Golf Clubs, pro line Chandler Harper, 9 irons, 4 woods, $75. 213-329-3476. C

Flying Club Membership, Cessna 172's for $9.50 hr. wet, Hawthorne-based, $285. 213-329-1018. C

Ping Pong Table & access., $20. 213-755-7166. C

Camera, Voigtlander Bessamatic, 35mm, single lens reflex, Septun f/2 50mm lens, carrying case, $110. 213-532-7846. C

Tent Trailer, 1964 Westerfield, sleeps 6, $250. 213-833-4667. C

Yamaha, 1964, 250 cc, $250. 213-671-3704. C

Apt. Building, 4-unit, Anaheim area, 2-bdrm., 1 bath ea., cpts., dps., bltins, $45,000. 714-776-2845. C

Home, 3-bdrm., 2-car gar., 10 min. walking distance of Norair, consider leasing, $22,000. 213-324-5867. C

Razor, Sunbeam Shavemaster, $12. 213-378-5175. C

Hodaka 90, 1966, w/extras, $310. 805-259-2674. C

Home, 4-bdrm., 2 baths, fam. rm., corner, view, near San Pedro, newly decorated, 4¾% G.I., $35,500. 213-377-8856. C

Wanted to Buy

Bedroom Set, provincial, w/canopy bed. 213-378-4959. D

Bicycle, small to medium, beginner's type, in good condition. 213-644-5852. D

Ford, interested in early 1928-'32. 213-329-4200. D

Air Conditioner, Mark IV, for auto. 213-396-3825. D

Camper, or shell for 1958 Ranchero. 213-329-1723. D

Revolver or automatic, .22 cal., short, long or long-rifle cartridge. 714-879-4568. D

Free (To Be Given Away)

Kittens, half Siamese, male & female, 8 wks. old. 213-371-8330. F

Dog, male collie, 4 yrs. old, well trained. 213-645-8611. F

Kittens, black & white male & calico female. 213-692-6336. F

Rentals Offered

House, 4-bdrm., 2 baths, stove & refrig., 2-car gar., fenced backyard, near shopping center, $165. 714-847-8140, 213-860-5288. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Apt, 3-bdrm., 2 baths, 3 blks. from ocean, cpts., dps., bltins, piped music, bltin vacuum, gar. w/storage cabinets, $175. 213-372-8835. G

Apt, cpts., dps., bltins, all elec., closed gar., 5 min. to Nort. PV, 20 min. to Norair, 1 & 2 bdrms., unfurn., $135; furn., $155. 213-375-9397, 213-375-2091. G

House, 4-bdrm., 2½ baths, redecorated, avail. Sept. 9, 1968-July 1, 1969, fireplace, in Hermosa Bch., max. 3 men, refs. reqd., $375. mo. 213-595-6598. G

House, 1-bdrm., furn., utilities, adults, $20 wk. 213-324-1914. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Compton Blvd. & Woodruff, Bellflower. William E. Filbey, 213-925-0030.

7:30 a.m. — 4:15 p.m.

From West Los Angeles, Brentwood. T. F. Cook, Mariposa, ext. 4265, 213-826-2061.

Long Beach, Lakewood Plaza Area, Long Beach. William L. Olsasky, Norair, ext. 4874, 213-429-1757.

8 a.m. — 4:45 p.m.

From Woodland Hills & Canoga Park Area, Woodland Hills. J. Cromwell, Norair, ext. 2682, 213-348-8712.

Carson & Main, Carson. Bill Honabach, Nort. Haw., ext. 403, 213-834-0309.

Rides Offered

7:30 a.m. — 4:15 p.m.

Long Beach, Lakewood Plaza Area, Long Beach. William L. Olsasky, Norair, ext. 4874, 213-429-1757.

8 a.m. — 4:45 p.m.

From Woodland Hills & Canoga Park Area, Woodland Hills. J. Cromwell, Norair, ext. 2682, 213-348-8712.

Carson & Main, Carson. Bill Honabach, Nort. Haw., ext. 403, 213-834-0309.

Rentals Offered

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Bachelor Apt, ½ block from Northrop, util. pd., $90 mo. 213-675-6481. G

Studio Apt, 3-bdrm., all elec., 2½ baths, gar., pvt. patio, near Del Amo Center, $265. 213-329-3793; 213-329-3018. G

House, 3-bdrm., 1½ baths, bltins, lge. den, fireplace, pool, patio, 1½ miles from Nort. Hawthorne, lease w/option to buy, $250. 213-676-2986. G

Apt, small 2-bdrm., o/gar., no children, no pets, gar. not inc., $110. 213-328-2932. G

Rentals Wanted

House, 2-bdrm., service porch, lge. yd., Inglewood, Hawthorne, Gardena or Torrance area desired, on own lot, $130-$135 mo. max., 213-674-5803. H

House, 3-bdrm., fam. rm., Inglewood High Crozier area, by Sept. 1, up to $225. 213-672-4913. H

House, 2 or 3-bdrm., w/gar., close to Norair Plant 3, need by Sept. 1, $150 or less mo., 213-866-2079. H

Child Care

Child Care offered, near Rosecrans & Inglewood Ave., fenced yard, 3 yrs. & up. 213-679-6219. I

Child Care offered, my home, 5 min. from Northrop, pre-school age preferred. 213-676-5559, 213-676-0726. I

Personals

My family & I wish to express our thanks & appreciation for the thoughtfulness & kindness extended to us at the recent passing of my husband & our father. MRS. HOYT E. ROSS & FAMILY, DARLENE COLLIER & FRED ROSS. L

Thanks to our many friends for the retirement dinner & gifts. We will use them & think of you. MR. & MRS. GEORGE KNIGHT. L

I wish to thank all my friends & co-workers at Northrop for the wonderful retirement party & gifts. K. L. TARY. L

For Sale or Trade

Falcon, 1965 Ranchero, r/h, auto. trans., $1,250 or trade for 1965 Mustang, r/h, auto. trans. 213-532-7825. M

Auto Parts, T-10 4-spd. Chevy w/Hurst, 5:13 posit. 3rd for 1955-64 Chevy, vericam for small block, $265 or trade for 327 parts. 213-566-6396. M

SCHOLARSHIP WINNER—Lou Cinda Holt (center) talks with her parents, Mr. and Mrs. Frank Holt, after receiving a Northrop Merit Scholarship certificate and a bouquet of roses in ceremonies at the Manned Spacecraft Center in Houston. Mr. Holt is a supervisor in Brown & Root-Northrop's Space Environment Simulation Laboratory in Houston. Miss Holt was one of 10 high school seniors to win a Northrop Merit Scholarship this year.

Checking the application of a prospective Nortronics employee gives Mrs. Bonnie Berry of Partners for Progress a better insight into the type of employees being sought by employers.

Job Placement Representative Tours Anaheim

A representative of Orange County's Partners for Progress has been the guest of Nortronics Anaheim for a week of observation and study.

Mrs. Bonnie Berry visited the Personnel and Industrial Relations areas observing job applicants and their interviews. She observed the operations of the Employee Relations, Medical, Security and Compensation offices, acquainting herself with the functions of each.

Mrs. Berry came to Nortronics to learn more about job recruiting and placement from an employer's point of view.

According to Mrs. Berry, Partners for Progress exists "for the purpose of assisting the minority community in becoming part of the socio-economic mainstream of the county."

Nortronics Golfers Play This Month

Nortronics golfers at Hawthorne and Anaheim have completed play in July tournaments and are now preparing for others scheduled for August.

Four flights of Hawthorne golfers participated in the July tourney at the Corona National course. Honors for a best game net of 63 went to Dave Krieghoff, NRC golf commissioner. All other scores are also net.

In the first flight, Jim Randazzo and Ed Stone tied for the lead, each with a 69. Second position went to Bob Marsh for his 70. The second flight was captured by Gene Wycoff who came in with a 70. Gene Bailey and Russ Munsen tied for second with 72's.

Flight three was led by Jim Mounts' 68, followed by a 69 from Bill O'Toole and a 71 from Bob Sutton. The fourth flight was won by Len Kaufman who shot a 71. Tony Piccirello finished with a 73 and Bud Houske carded a 74.

Meanwhile, Anaheim golfers were at San Juan Hills competing in two flights of medal play. Bob Benedict led the first flight with a 68. Loren Persons and Keith Davis were close behind with a 69 and 70, respectively. In the second flight Otto Dorner's 69 was better than Jim McCabe's 71 or Bob Montgomery's 72.

Hawthorne linksmen tee off at 10 a.m., August 24, at El Rancho Verde Country Club in Rialto and the Anaheim golfers begin play at 8 a.m., at Fallbrook Country Club.

THE FIRST FLIGHT of the C-5 has been interpreted in acrylics by Al Helner (left), supervisor of the Receiving Test unit, and was presented to Ross Miller, vice president and Navigation department manager. It is now hanging on the west wall of the newly redecorated Navigation department lobby in Hawthorne. Framed reproductions of early navigation instruments and other art will soon decorate the walls in the reception area.

Four Selected For Area Posts By Toastmasters

Four Northrop Toastmasters Club members have been named to offices in Area 4 of Toastmasters International, District 50.

Hank Greenberger, Nortronics Palos Verdes, will serve as educational assistant area governor, the second highest office in the district.

Al Weinstein, administrative vice president of the Northrop club, will serve as area treasurer. Verne McElroy, Norair, will be sergeant-at-arms, while Ken Henry of Northrop Architectural Systems will be director of special projects.

Mr. Greenberger and Felix Dunnett, Norair, will serve as district council members.

Mr. Greenberger will double as area director of Debate Activities, while Mr. Dunnett will direct the Youth Leadership program.

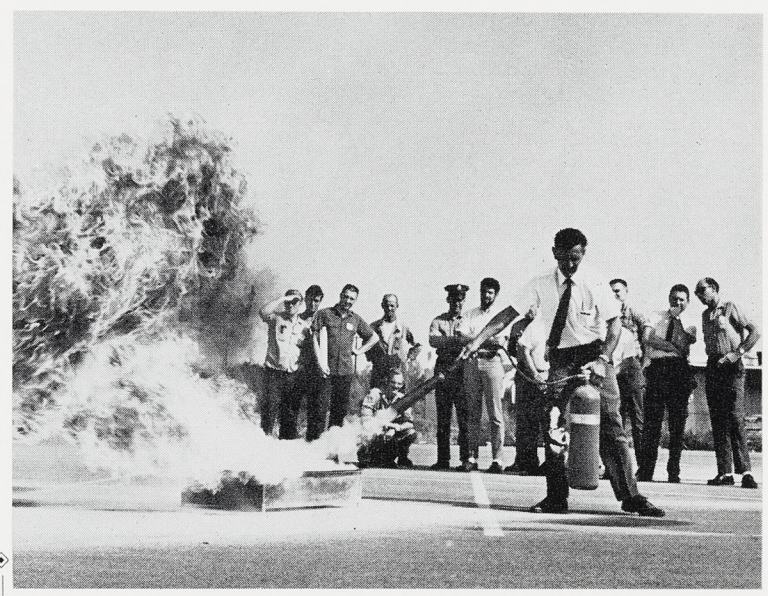
Four Fire Fighting Classes Completed

Four fire fighting classes have been attended by 85 Maintenance, Guard and Safety Committee personnel at two Anaheim facilities, according to John Burke, Plant Protection supervisor.

The classes familiarized those attending with the various types of fires and the equipment most suitable for extinguishing them.

Each participating employee had the opportunity to extinguish a hot flammable liquid fire.

Two classes each were presented at Page Court and the Orangethorpe facility.



A GASOLINE FIRE is quickly brought under control by Joe Levassiur, safety demonstrator with the General Fire Extinguisher Corporation, who correctly applies a carbon dioxide extinguisher to the "problem" as Nortronics Anaheim men look on.

DEGREES

(Continued from page 1)

edge and skills.

"I would like to encourage all of our employees to participate in the many educational programs subsidized by the company. Continuing education is vitally important to us all as individuals to stay abreast of the rapidly changing technology within our industry and our chosen field."

NOONTIME ANTICS

Lunch Takes Backseat to Fun at P.V.

Lunchtime at Nortronics Palos Verdes has not been the same since a number of employees decided to do something besides eat during their 45-minute break.

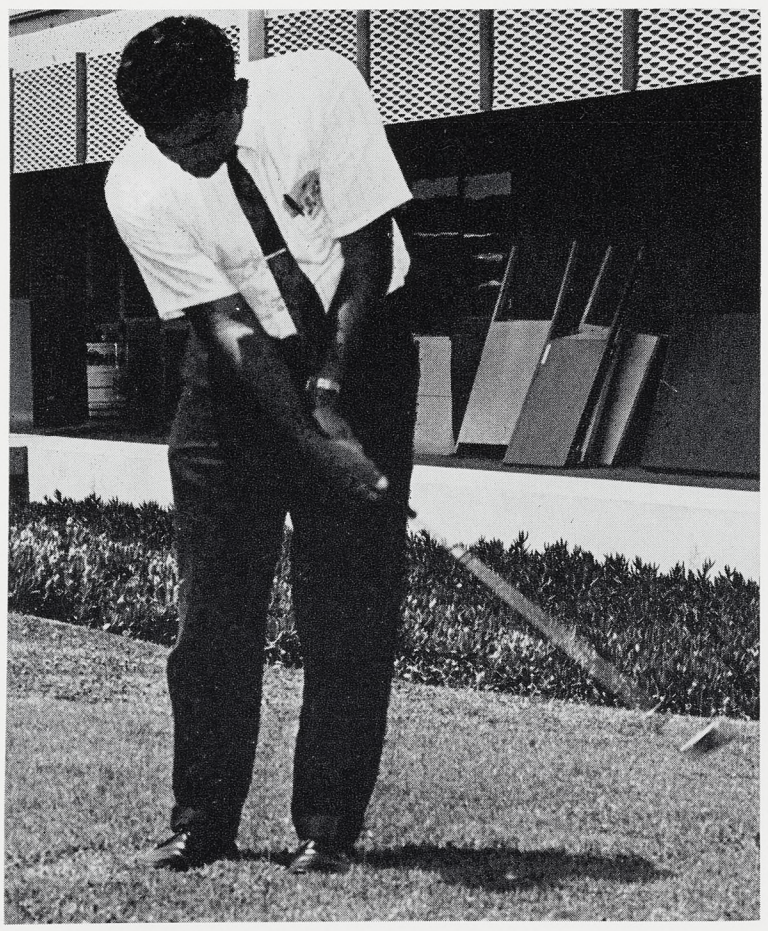
For example, William Adams, jr., plays the bagpipes in the parking lot. On the inner court around the ornamental pond, a variety of other activities have sprung up.

A group of technical and engineering personnel have set up a cross-country croquet course which dips and twists around Building Six. A tournament takes place daily. Games feature a rather large hazard—Building Six. It is very easy to lose a ball underneath the building.

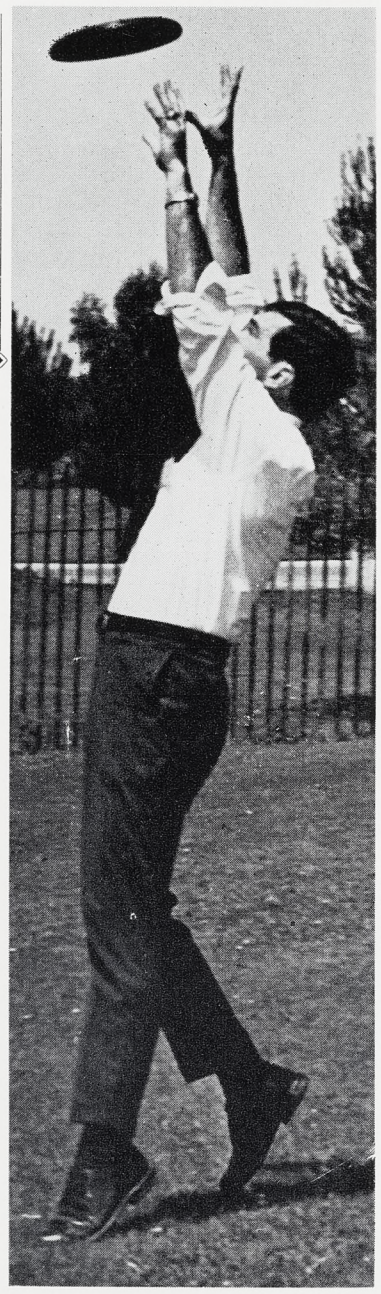
And if you take a walk at lunchtime and a whizzing plastic platter swoops at your head, it is not a new Northrop product being tested, but merely some friendly engineers having a "frizbee party."

A "frizbee party" consists of throwing a bright-colored, plastic top called a frizbee, back and forth. The only problem encountered at PV is a frequent low ceiling condition caused by fog which makes frizbee tracking rather difficult.

Though the grounds of the PV Facility undoubtedly were designed without golf in mind, some employees have found them quite suitable for a pitch and putt course by utilizing miniature flags brought by one of the players.



LUNCHTIME is not siesta time at Palos Verdes, as these photographs illustrate. Vince Stagnaro (left) takes a cut at a golf ball; Lane Walters (right) stretches for a high-flying frizbee; and Van Wood lines up a croquet shot while Walden Schultz looks on during a typical noon break.



NORTHROP NEWS

NORTHROP NORTRONICS

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OMEGA Debut Scheduled On A British Oceanliner

The commercial version of Nortronics' OMEGA shipboard navigation receiver—OMEGA I—will make its maiden voyage this fall aboard a British oceanliner of the Manchester Lines, according to Dennis Bates, OMEGA applications engineer.

Meanwhile, an OMEGA team has just returned to Hawthorne from the first public display of the OMEGA I at the "Ships' Gear International '68" exposition in London. The team was comprised of Joe Enright, OMEGA applications engineer; Sy Shenkman, Nortronics field engineer for navigation systems and Mr. Bates.

During the week-long exhibition, OMEGA I was fully operational. The system received signals from Norway, Trinidad, Hawaii and Forestport, New York, where ground stations now exist. The advantages of the receiver were displayed before thousands of visitors including ship captains from around the world and international shipping executives. They expressed general interest in navigation and specific interest in the reliability and accuracy of OMEGA I.

The display also marked the first public co-participation by Marconi International Marine Company, Ltd. and Northrop Corporation working together on a program to demonstrate and distribute OMEGA I.

Notable visitors to the exhibit included Britain's Prince Philip, the Lord Mayor of London, the captain-designee of the new oceanliner Queen Elizabeth II and Sir Gordon Radley, director of the English Electric Company, who requested a detailed briefing on the OMEGA I.

According to Mr. Bates, the understanding with Marconi Marine and the public showing "marked the first step in broad sales and distribution of the OMEGA receiver."

THE OPERATIONAL OMEGA I receiver is demonstrated in London by Dennis Bates (left), Nortronics applications engineer, to J. W. van der Lely of Radio Holland and Lt. Commander J. C. P. von Weiler (right), of the Holland Navy.

PICI TEAM MEMBERS from Nortronics' Navigation department and Lockheed-Georgia witness the actual measurement of the external dimensions of the C-5 Inertial Measurement Unit performed by Ben Anderson, Nortronics precision tooling inspector. Individual members are (from left) Nortronics Chairman Neale Ebright, Marv Zuckerman, Nortronics; Sherm Allen, Nortronics; Nick Proctor, Bill Adams and Keith Smith, Lockheed; Lowell Martindale, Nortronics; Hal Hoeschen, Lockheed; and Bert Diamond, Nortronics.

PICI Team Praised By Lockheed

The highly successful C-5 Production Item Conformity Investigation (PICI), for which the Nortronics Navigation department has prepared over the past several months, has received praise from the Lockheed-Georgia team which conducted the week-long investigation this month.

W. F. Haberman, Lockheed purchasing agent and PICI team chairman, was complimentary to all Nortronics personnel involved on the C-5 program. "I just want to say I'm delighted," said Mr. Haberman. "You've done a truly fine job and have accomplished something of which we can all feel justly proud."

Mr. Haberman added in his commendation letter: "Your continued good work will assure that

(See PICI, page 6)

BY AIR FORCE

Ed Gardner Commended

A former U.S. Air Force captain, now a Nortronics employee, has received the Air Force Commendation Medal in ceremonies this month at El Segundo.

Edward Gardner distinguished himself by meritorious service over the past two years while serving in the capacity of the system program staff officer for advanced plans and technology, in the Plans and Policy Division of the Space and Missile Systems Organization, El Segundo.

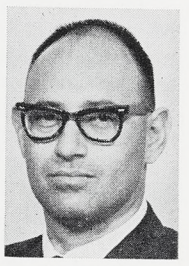
The medal, issued by Secretary of the Air Force Harold Brown, was awarded for "outstanding skill, knowledge and leadership" which "aided immeasurably in the development and definition of procedures to enhance the effectiveness of multiple-agency efforts in Air Force Systems Command for the development and acquisition of ballistic missile and space systems of critical importance to the defense of the nation and the free world."

In his new responsibility at Nortronics, Mr. Gardner has been assigned as program planner on a newly acquired Navy ship program, reporting to Mel Ventura, chief of Program Planning and Control at Anaheim.

Edward Gardner

Brauer Latest Degree Winner At Nortronics

A Nortronics employee is one of a group of 17 recent graduates who have received college degrees under Northrop's Educational Refund Plan.



Mr. Brauer

Mark Brauer, a senior publications analyst in Product Support at Hawthorne, has received his bachelor of science degree from the University of Southern California.

He was tapped by the national honorary fraternity, Kappa Alpha Mu.

Mr. Brauer began work on his bachelor's degree in 1963 and, since graduation last January, has already compiled nine units toward a master's degree in aerospace engineering.

He began his career with Northrop in 1956 as a designer on the B-58 capsule at Northrop Ventura, formerly the Radioplane Company.

KEEP 'EM ROLLING

Transportation Men Get Job Done

Key transportation employees at Nortronics installations have one important thing in common: they get the job done. But, there's much more to it than that.

Like professional quarterbacks, they call the plays that keep the vehicles rolling. Bill McCann in Hawthorne and Gary Latham at Anaheim are Transportation leadmen and, as such, function as dispatchers for Nortronics' rolling

(See photos, page 6)

fleet of 50 vehicles. These vehicles log an average of 80,000 miles a month under the capable hands of 15 drivers who are proud of their safety record.

The Anaheim crew of Robert Bredewig, acting supervisor of Warehousing and Transportation, has driven since 1959 without a single chargeable accident. Hawthorne drivers, supervised by O. M. Fogle, general supervisor of Warehousing and Transportation, have never had a chargeable accident since they began operating in 1960.

While Mr. McCann and Mr. Latham are calling the moves on two-way mobile radio systems, Sonny Herron is responsible for the Transportation assignment at Palos Verdes. He maintains the executive fleet and coordinates "a thousand and one" miscellaneous transportation tasks "on the hill."

Mr. Herron meets all incoming couriers and expedites the handling of special parcels and "rush" correspondence between facilities.

The secret of superior performance by Nortronics Transportation employees seems to be the attitude of the men that make it move. Mr. McCann, a 15-year Nortronics employee, sums it up: "Every day is another challenge, and every hour is different. We would like to think that we can provide any transportation service for the good of the company. I mean, whatever it takes to do the job, that's what we're going to do."

Transportation tackles everything from the handling of raw stringer stock and a seven-ton piece of equipment for the "shake shack," to tiny machined parts and resistors or diodes. Drivers deliver "rush" orders directly from vendors to prevent delay on production assembly lines. In addition, the department sees to the mechanical upkeep of the entire fleet.

Mr. Fogle has seven drivers attached to Hawthorne; Bill Carroll, Hugo Eppolite, Leslie Green, Mr. Herron, Wilson Holly, Norman Leece, Dave Moreno.

Eight men drive the units in Mr. Bredewig's Anaheim Transportation section. They are Walt Hill, Aaron Jeffries, Obie Mitchell, Carl Myers, Wes Parker, Larry Schoonover, Ercil Smith and Al Williams.

Registrars Begin In-Plant Voter Signups Tomorrow

Special registrars will be available at Northrop Corporation facilities in California over the next few days to offer a special service to employees.

Employees not properly registered to vote in the upcoming November general election may do so through this convenient in-plant service.

The deadline for registering to vote in November is September 12.

There is no registration charge. An individual must be a U.S. citizen, at least 21 years old, a resident of California for one year, the county for 90 days and the precinct for 54 days prior to the election.

Registration schedule for Nortronics Division:

Anaheim—August 29, September 3 and 5, Building Y1 lobby; Building Y3, south entrance, inside; Building Y42 lobby.

Palos Verdes — August 29 and September 3, Building 2 lobby.

Hawthorne—August 28, 29 and September 3, Personnel Services, Column B-12.

NCL Building—September 3 and 4, Gate 10.

Hours at all locations will be 11 a.m. to 1 p.m.

NORTHROP NEWSMAKERS

F. E. Mullins has been named Norair resident representative at The Boeing Company for the 747 Program. **Jack Mannion,** Norair vice president — Manufacturing and Materiel, announces Mr. Mullins will have responsibility for the over-all coordination of the Norair resident team at Boeing.

* * *

Harvey J. Jablonsky has been named assistant to **Ward B. Dennis,** vice president, Forward Planning. Mr. Jablonsky joins Northrop after a long military career during which he attained the rank of major general in the U.S. Army.

Mr. Jablonsky is a graduate of Washington University, St. Louis, the U.S. Military Academy and the Army War College.

* * *

Robert B. Watts, jr., Northrop assistant general counsel, has participated as a panelist in a discussion of "Prime and Subcontractor Relationships and Problems" at the annual meeting of the American Bar Association in Philadelphia.

* * *

K. M. Mitzner, Norair, has authored an article titled "Electromagnetic Scattering from Mirror Symmetric Bodies" for publication in the SIAM Journal of Applied Mathematics.

* * *

Dr. A. K. Goswami of Northrop Corporate Laboratories has been named one of the first recipients of a new annual award of the Electronics Division of the American Ceramic Society. Dr. Goswami is a principal scientist in the Material Sciences Laboratory.

To be presented in St. Paul, Minnesota at the society's fall meeting, the award will be made to Dr. Goswami as co-author of a technical paper entitled "Phenomenological Theory of High Permittivity in Fine-Grained Barium Titanate." Sharing the award will be W. R. Buessem and L. E. Cross, who helped prepare the paper when the three were attending the Pennsylvania State University.

* * *

Two key executive appointments have been announced by The Hallicrafters Company, a Northrop subsidiary.

Kenneth M. Fehr has been named vice president - Finance. Mr. Fehr joined Hallicrafters after serving as corporate controller for the Interlake Steel Corporation. He is a graduate of Pennsylvania State University.

Lorres Thomas has assumed duties as manager of Market Planning and Research of the Military Division. He has served previously as a marketing consultant to Northrop and Litton Industries. A graduate of the U.S. Military Academy, Mr. Thomas also holds a Master of Science degree from the University of Illinois.

* * *

H. W. Jones, Norair, has been elected treasurer of the Southern California Chapter, Special Libraries Association, an international organization of 6,500 professional librarians and information experts.

* * *

Thomas L. McCarthy, Norair, is serving as chairman of the Los Angeles Area Council Jamboree Committee for the 7th National Boy Scouts Jamboree to be held in 1969 at Farragut State Park, Idaho. **Dr. D. A. Hicks,** Northrop Corporate Laboratories, is serving as chairman of Jamboree Camperships.

* * *

Bejan Khajeh-Nouri, a senior engineer in Fluid Mechanics Research at Northrop Ventura, will teach a four-unit course at UCLA this fall.

The course, "Continuum Mechanical Approach to Viscous Fluids," will be offered from 7 to 10 p.m. on Wednesdays, beginning September 18, in Room 5264 of Boelter Hall.

A knowledge of differential equations is the prerequisite for entrance, Mr. Khajeh-Nouri said. The course is administered by the University of California Engineering and Physical Sciences Extension.

* * *

Dr. E. L. Harmon, a senior materials specialist at Norair, will speak on hypnosis at the Smoothsayers Toastmistress dinner meeting Wednesday, September 11 at 6 p.m. in Dandel's, 120th and Western Avenue.

A lecturer and instructor on hypnosis and self-hypnosis, Dr. Harmon feels hypnosis unlocks human potential. Reservations can be made through Marguerite Dougherty at Nortronics, ext. 421; Shirley Wilson, Norair, ext. 4296; and Cathy Young at NRC, ext. 2486.

* * *

Josh Noily, James Ferguson and **Henry Greenberger** of Nortronics, have co-authored an article on integrated command display systems featured in the August 5 edition of *Electronics* Magazine.

The nine-page article was illustrated by photographs showing several elements of Nortronics' Integrated Command Display System.

Northrop Carolina Receives Contract

Northrop Carolina, a Northrop subsidiary, has received $1.1 million in additional funding from the Department of Defense for the production of parachute ground flare systems.

Total contract value is now in excess of $2.3 million.

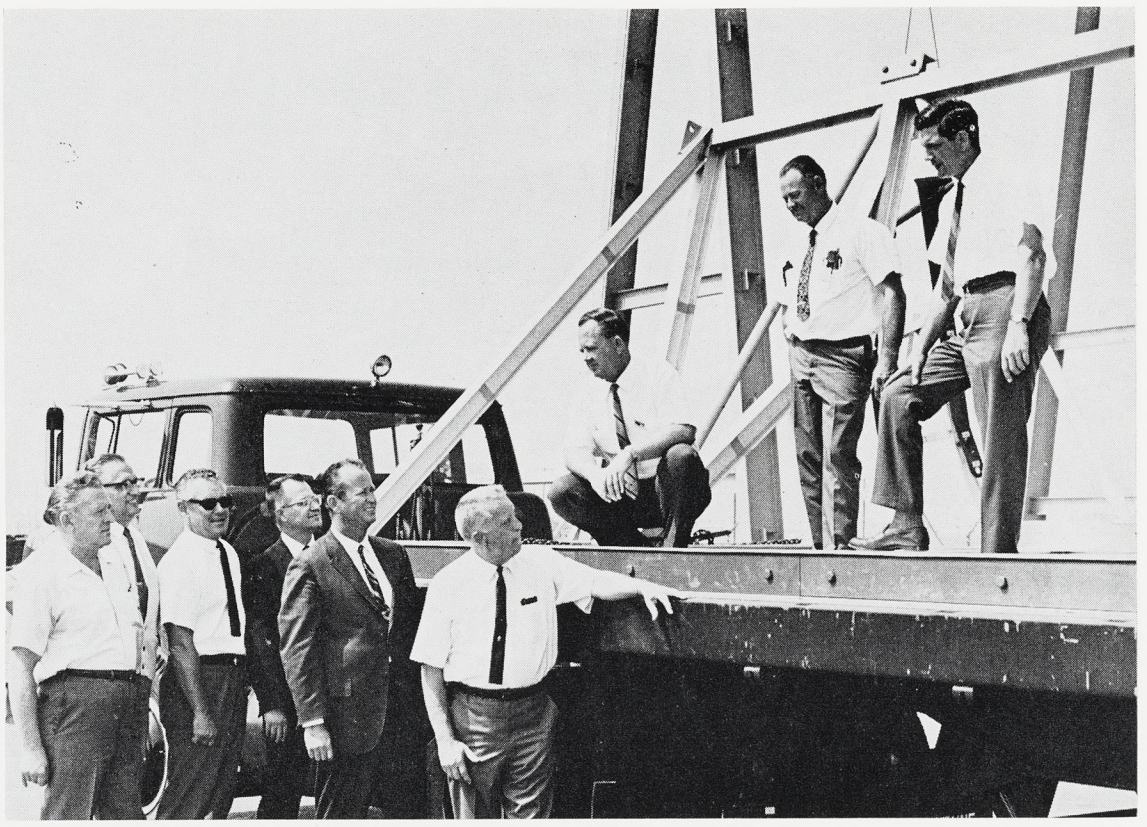
Designed to provide long-duration, continuous illumination, the flares are light enough to be carried, set up and fired by one man. A self-contained unit weighs only 14 pounds and includes 12 flares and a packing case that serves as a launcher. A non-electrical ignition system makes it possible to fire all flares in sequence or only a selected portion of the total unit. Each flare provides up to six minutes of illumination.

PAGE CENTER JOB NEARING FINISH

Communications electronics equipment for the new United States European Command Center at Patch Barracks, Stuttgart, Germany, is nearing completion by Page Communications Engineers.

Systems installed by Page at the center are teletype and data, record and playback, secure voice, graphics and briefing, sound amplification and distribution, and display.

Page's contract is from the U.S. Army Electronics Command and is under the technical supervision of the U.S. Strategic Communications Command (STRATCOM).



TOP MANAGEMENT from Norair and Northrop Architectural Systems gathered at the NAS facility in the City of Industry for the initial delivery of 747 shipping fixtures. From left, Jim Hunter, Leo Farnham, NAS President Douglas McFarland, Norm Turner, Vice President and Norair General Manager F. W. Lloyd, Joe Druliner, Ken Veldheer, Clyde Reno and Bill Russell. Northrop Architectural Systems began work on this effort in February.

INITIAL ORDER

NAS Delivers 747 Shipping Fixtures

Northrop Architectural Systems (NAS), a wholly owned subsidiary of Northrop Corporation, has delivered to Northrop Norair initial Boeing 747 shipping fixtures it is building in support of Northrop's 747 Program efforts.

F. W. Lloyd, vice president and Norair general manager, visited NAS's City of Industry facility to accept the first units.

The NAS supporting effort, which began in February, calls for the production of two different types of fixtures, Shipping Mechanical Equipment (SME) and 55 Mechanical Equipment (55 ME). The work is being performed by the Special Projects Division at NAS.

The SME units are jigs which act as cradles for completed fuselage panel assemblies shipped in oversized boxcars to Everett, Washington.

The 55 ME "strong backs" are supports bolted to the assemblies during final assembly at Norair and are then attached to the SME for shipment to Everett.

At Everett, the 55 ME and assemblies are removed from the SME and used by Boeing for a mating tool in the final assembly of the 747.

Therefore, the 55 ME units must be compatible with both Norair and Boeing equipment. This necessitates mastering for complete interchangeability.

Over the past two years, the NAS Special Projects Division has produced a large number and variety of custom designed items for the 747 project.

These include new processing tanks for Plant One, major assembly jigs scaffolding system for Plant Three and hundreds of material handling fixtures and trucks.

It was also the main contractor for the automated stringer processing line, better known as the "car wash," at Nortronics Anaheim.

Aside from special projects, NAS is internationally known for its "Arcadia" line of sliding glass doors, windows, storefronts and curtainwall installations.

PARTY PROBLEMS

Money, Volunteers Key to Campaign

(Editor's Note: Following is the fifth in a series of articles designed to acquaint Northrop personnel with America's two-party system; to encourage everyone to support his party and candidates, and then vote in the November elections.)

Once the conventions are over, the main work begins.

The fact is, work has been going on almost continuously since the last presidential election, and after next November 5, party leaders will start over again — planning how to win or how to avoid losing the next election.

To list the problems faced by leaders within a political organization would require a thick volume, but the most serious ones are these:

1. Accumulating money to finance the campaign.

2. Finding people willing to donate their time to the day-by-day labor of conducting the campaign.

The question of political funds is complex and sensitive.

First, the sheer numbers of people and their mobility in present-day America have greatly increased the cost of reaching the individual voter. Second, laws limit the amounts which may be spent by individual candidates and organizations. Third, the vague notion persists that anyone who contributes to a political campaign is seeking special privilege or gain.

With the growth in our voting age population, it now costs as much as $175 million in a single year to elect a half-million officials, from president to town clerk, and defeat a half-million opponents.

Laws limiting campaign expenditures were designed to eliminate abuses, but one result has been a proliferation of political organizations. This renders it difficult to determine where assistance should be offered. It may also lead to internal party conflict and waste of both money and energy.

The notion that a contribution of money or labor may be interpreted as an exchange for special privilege, and therefore vaguely unclean, is rooted historically in the spoils system. Civil Service has wiped out a major share of that, but in past years many large political contributions have been given for special privilege in return. As a result, most businessmen, and particularly those dealing with the U.S. Government, have shied away from political involvement. It would seem better not to give than be accused of self-seeking.

However, the best way to forestall any possibility that millionaires, or big business, or big labor unions could swing an election by major contributions is for all of us to give a little.

If each employed man or woman in the nation were to give $10 to his favorite candidate or party, the total would amount to $600 million and more.

As for campaign help, many of us may feel there is nothing we can do but all kinds of help is needed. This may range from compilation of voter lists to distribution of bumper stickers and writing press releases for a campaign speech.

If we help, we become involved, and above all, we need to become more involved in our elective process.

(NEXT: THE VOTER AND HIS PARTY)

"Never look down on politics or politicians. Politics is beneath none of us. Active participation in a political campaign is an American privilege and duty. More such participation by more of us is the soundest and surest way to get men and women of character and intelligence elected to public office."

—Stanley C. Hope
Former President
National Assn.
of Manufacturers

Grievance Procedure—A 'Hot Line' To Management

By Alan C. Morgan, Vice President—Industrial Relations

Back in 1965 and early 1966, our recently retired Corporate vice president—Industrial Relations, William Larrabee, wrote a series of articles about our Northrop employee benefits. These articles were published in the Northrop News and were most helpful to all of us. Since then, a great many new people have joined the Northrop family. It has occurred to me that not only these people but perhaps all of us would benefit if we brought some of those articles up to date and re-published them here.

Alan Morgan

One of the articles which received recognition all over the country dealt with our grievance procedure. Northrop has always been concerned with every one of its people, as a person and as an individual. I trust that re-publication of this article will bring to mind again that the grievance procedure at Northrop provides a practical and usable "hot line" to management.

NORTHROP GRIEVANCE PROCEDURE

(Reprint from Northrop News, February 16, 1966)

A large oil company in Texas wrote me recently, stating that it had been examining grievance procedures throughout the country and that Northrop's gave the employee the very best of opportunities to present his problems to management and to correct supervisory mistakes or misunderstandings affecting his job. This brought to mind the fact that the ability to be heard and to be protected in one's position is just as important as any of the other benefits which we have at Northrop.

People Count

The reasons why Northrop goes to such lengths to protect its people are pretty clear. In the first place, your management believes that Northrop people should be treated as individuals and that whatever is important to our people is equally important to our company. Furthermore, your management knows that a worker with a grievance on his chest and on which he can't get a real hearing spends more time brooding about his problem than he does in constructive work. This is plain human nature. Lastly, supervisors make mistakes just like everybody else and no one would want such a mistake to work unjustly to the detriment of the employee or result in the loss to the company of a good employee. Therefore, the Northrop grievance procedure was set up for nonsupervisory, nonbargaining unit personnel. Every such employee is assured that he can go straight through to company top management, get a fair hearing, and if he is not satisfied with the decision, he can request a hearing before an outside arbitrator, with the company paying the arbitrator's fee and expenses.

The grievance procedure is published in detail in "Working with Northrop," but generally speaking here is how it works: Let us suppose that one of the people in our plant thinks he is being laid off by his supervisor improperly under the company regulations or that he has been wrongfully denied an upgrade or that he has been the victim of discrimination or other such violation of Northrop practices. His first impulse, of course, is to be mad and upset, but when he has thought the situation over, and not later than seven days after the event happens, he should go to his supervisor, tell him that he intends to follow the company grievance procedure and tell the supervisor just why he thinks he is right and the supervisor is wrong. He may do this either in writing or orally. Perhaps the supervisor will be convinced or will have another solution to the problem. In any event, the supervisor must make a decision within the next seven days. Incidentally, the employee may obtain assistance from his Industrial Relations office in connection with this first step if he so desires.

Getting Help

If the employee is still unhappy with his supervisor's decision, he should then go right away to the Industrial Relations people in his division who will give him some forms to fill out and will help him summarize his problem, his supervisor's decision, and the action which the employee wishes the company to take.

Industrial Relations people then go into the matter very thoroughly, consult with all appropriate sources of information, perhaps call a conference with the employee and various supervisors, and attempt to reach a satisfactory adjustment. If a mutually satisfactory solution is not worked out, then the supervisor's superior, called the "administrative officer," must make a decision and notify all concerned.

Let us now assume that the employee still isn't satisfied with the decision reached. He then tells his Industrial Relations people that he wishes to go before the Management Appeals Committee, thereby getting the opportunity to discuss the problem openly with the top management of the company. This committee is made up of three people. The Corporate vice president—Industrial Relations usually represents our president, Mr. Jones, on the committee. The employee's director of Industrial Relations is a member of the committee. The third member of the committee is usually the head of the department concerned. For instance, in Norair the committee might be made up of Jack Mannion, vice president—Manufacturing and Materiel; John Richardson, director of Industrial Relations; and the Corporate vice president—Industrial Relations. In Nortronics, it might be Frank Lynch, vice president and manager, Anaheim department; Elmer Noonan, director of Industrial Relations; and the Corporate vice president—Industrial Relations. At Ventura, in addition to the Corporate vice president—Industrial Relations, the committee might well include George Grogan, vice president—Engineering and Rex Fairless, director of Industrial Relations.

A Close Look

This committee really goes into the employee's problem. It listens to his case and any witnesses he wishes to bring in. It calls in the supervisor and, in short, gets every bit of information it can on the situation. It then reaches a decision and notifies all concerned.

It sounds as if we are getting a little repetitious but let's assume that the employee is still not satisfied with the decision made. He can then go to arbitration, which means in substance that the employee and the company select an outsider from a list of recognized arbitrators furnished by the government who then hears the case.

All of this sounds pretty complicated but it really is not. Each step must fall within a prescribed time limit so that things move along rapidly. Industrial Relations people are always ready to help the employee in any stage of the proceeding in preparing his documents, lining up his witnesses. The employee may have a fellow employee or a lawyer represent him if he so desires. In short, everything is done to ensure that every individual employee's rights are fully protected and upheld.

An Example

In conclusion, let me tell you of a recent experience. An ex-employee was talking with me a few weeks ago. He said that he was sorry that he was no longer working at Northrop but that he felt that he had been laid off improperly several years back and was still disturbed about it. When I asked him why he didn't file a grievance, he said that he had been too upset. He did not say so but perhaps he felt, as some people do, that probably the company would back up its supervisor anyway and that even if he won, the supervisor would hold a grudge against him forever.

This gentleman was obviously a fine man who would have continued to be a credit to the company. Certainly he didn't have to file a grievance, but the company would like to have people in this kind of situation do so.

He needn't have had the slightest fear about getting a fair hearing because company management knows that its supervisors can make mistakes and that when mistakes are made they should be corrected. He need have no concern about his supervisor holding a grudge because the right kind of supervisor is anxious to do the right thing and recognizes his mistakes when they are pointed out to him. Even if the gentleman had been found to be wrong about the layoff, he would have had his hearing and would have avoided years of unrest.

You Must Act

If there is a moral to be read from this story, it is that the company can't know about the individual's problems unless the individual makes them known. The Northrop grievance procedure is there for the employee to use. We hope that he will read it carefully and that he will use it. He will thus be assured of the person-to-person relationship with his management which is so necessary in ensuring that each of us is recognized and treated as an individual.

FRANK LYNCH NAMED TO ATTEND MIT SENIOR EXECUTIVES PROGRAM

Frank W. Lynch, Nortronics vice president and Anaheim manager, has been selected by the Massachusetts Institute of Technology (MIT) to participate in the Program for Senior Executives.

Mr. Lynch

Mr. Lynch will attend the nine-week spring program at MIT to study a broad range of advanced corporate management techniques. He is one of 27 executives accepted nationally for the program.

An electrical engineering graduate of Stanford University, Mr. Lynch joined Northrop in 1950 and has held his present position since 1961.

The selection of Mr. Lynch brings to 11 the number of Northrop executives selected for advanced executive development programs at such universities as MIT, Stanford and Harvard.

Frederick Stevens, vice president and Nortronics general manager, nominated Mr. Lynch for the program. Thomas V. Jones, president and chairman, approved his selection.

LABOR DAY HOLIDAY

Northrop Corporation employees throughout California will enjoy a paid holiday Monday, September 2, in observance of Labor Day.

Only those employees notified in advance will be required to work. Normal work shifts resume September 3.

COLONEL RUDDOCK BOUND FOR TURKEY

Lt. Colonel William Ruddock, deputy Air Force plant representative since 1966, was bid farewell by Norair personnel and members of the AFPR office during a party in his honor.

Colonel Ruddock will report for duty in Ankara, Turkey, in early September. He was presented the Air Force Commendation Medal by Major General Dan Riley, commander, Air Force Contract Management Division, for meritorious service.

WISER THAN BEFORE

New Northrop 'Owls' See Safety Work

Two recent "direct hits" have emphasized the importance of eye protection at Northrop, and have earned Wise Owl Club awards for a crew chief at Norair and an electrician at Nortronics.

This brings to 107 the number of Northrop members of the Wise Owl Club of America, sponsored by the National Society for the Prevention of Blindness. Northrop has been a participant in the program for 12 years.

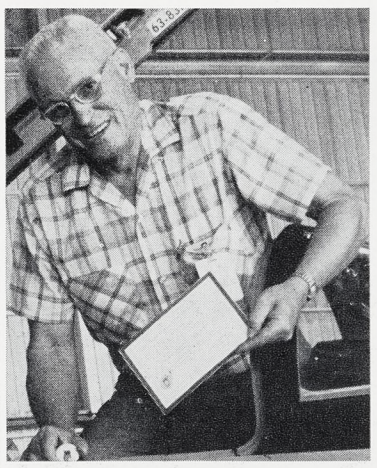
Denny Wilson, Norair experimental crew chief at Edwards Air Force Base, is now a member of the Wise Owls due to an accident that occurred while he was pressure checking defog lines for a reconnaissance nose installation. A plastic air filter exploded, cutting him around the face and neck. Mr. Wilson's safety glasses were pitted from the impact, but did not break. They were credited with saving his eyes.

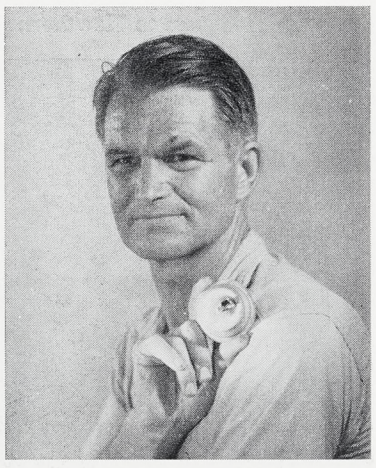
Verne Christensen, an industrial electrician at Nortronics Anaheim, became a Wise Owl after being struck on the lens and frame of his safety glasses when a telephone plug he was chiseling from the floor flew up and hit his face. The edge of the floor plug richocheted off Mr. Christensen's lens, cutting his face. Again safety glasses were responsible for saving an eye from serious injury.

Each new Wise Owl receives a membership certificate, a lapel pin and shop badge to commemorate his "near miss" and to remind others of the necessity for eye protection.

Employees are reminded by Lee Johnson, chief Safety engineer at Norair, and Al Van Der Most, Safety administrator at Anaheim, of the minimum requirements for safety lens and frames. Glasses must withstand the impact of a seven-eighths-of-an-inch diameter steel ball weighing 1.56 ounces when dropped on the lens surface from a height of 50 inches.

If prescription safety glasses are not immediately available to those who work where eye safety protection is required, molded plastic goggles or face shields can be checked out at all tool cribs.





THESE WISE OWLS, Denny Wilson (left), a Norair crew chief at Edwards Air Force Base, and Verne Christensen, an electrician at Anaheim, are Northrop's newest Wise Owl Club members.

WHAT DO YOU THINK?

Southern California Needs In A Rapid Transit System

Mr. Johnson

Dick Johnson, art requirement analyst, Nortronics Palos Verdes:

I proposed a rapid transit system 10 years ago. It has to work in conjunction with the freeways. The most economical system as far as the price of land goes, would be a monorail. A powerline can run it across anything. Not enough people would use a surface system to justify the cost of the land. We've got to have something because people aren't going to ride buses.

Mr. Furno

Russell Furno, senior tool and cutter grinder, Norair:

Something on the order of a monorail that would be sitting above ground, run on rails and be electric. If they had enough lines to commute from your outlying big cities in, it would cut down on the freeway congestion.

Mrs. Davies

Gail Davies, secretary, Ventura:

Rapid transit is badly needed in the Los Angeles area, because of all the congestion. A new system would work there, since neighborhoods and areas are close to one another. I don't think it could work out here in the Conejo Valley, however. You need a car. Things are just too spread out and decentralized for a rapid transit system to be feasible.

Mr. Glasco

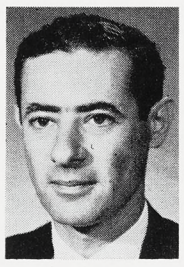
James Glasco, tool fabricator, Norair Torrance:

I would say that they need more buses. Where I live in Compton there isn't a bus I can take to work without first going downtown.

Mrs. Heale

Elva Heale, secretary, Norair:

A monorail. I think it would be faster. It could follow the freeways so that much of it would already be paid for. It might help lessen the number of accidents; although I think a great many car accidents are on the surface streets.



Mr. Padwa

M. N. Padwa, director, Systems Assurance, Ventura:

They should do five things: take money appropriated for freeway construction for a rapid transit system; employee trunk lines—trains and electric buses; make all vehicles electrically operated; use only those requiring small right-of-way or new facility cost; establish reasonable fares and time tables.

MEXICAN GROUP TOURS NORAIR FACILITY

A group of Little Leaguers from San Felipe, Mexico, toured Norair's Hawthorne Facility recently as part of an annual "baseball holiday."

The Hawthorne Diplomats Association, a local civic organization, brings a group of San Felipe Little Leaguers to Hawthorne for two weeks every summer.

The boys stayed in private homes and were provided other necessities for the visit, such as baseball uniforms, by various Hawthorne civic groups.

The Mexican team traditionally plays a series of games against local Little League teams.

Mexican Little Leaguers Visit Norair

TALENTED LENSMAN

Variety Important in Saldana's Life

If variety is the companion of excitement, Dave Saldana has had a good deal of excitement in his life.

To get from the bull ring in Juarez, Mexico to a photolab in Hawthorne, California, is a long journey, but Mr. Saldana, a Norair photographer, has somehow managed it with a few stops in between.

He was born in El Paso, Texas, and had but one ambition. That was to follow in his father's footsteps and become a bullfighter. He actually killed two bulls in the old Juarez arena.

"I guess I had to try it at least once to get it out of my system and now that I look back through the years, I guess I had more guts than brains," said Mr. Saldana.

However, he kept a promise to his mother and turned to cameras instead of the cape and sword.

World War II service as an Army Signal Corps photographer provided the basic training, study at the Fred Archer School of Photography, the polish for his career.

Mr. Saldana has worked for a news service supplying material to Spanish newspapers for the past 20 years. He is also photo editor of "Grafica," a Spanish language family magazine distributed around the world.

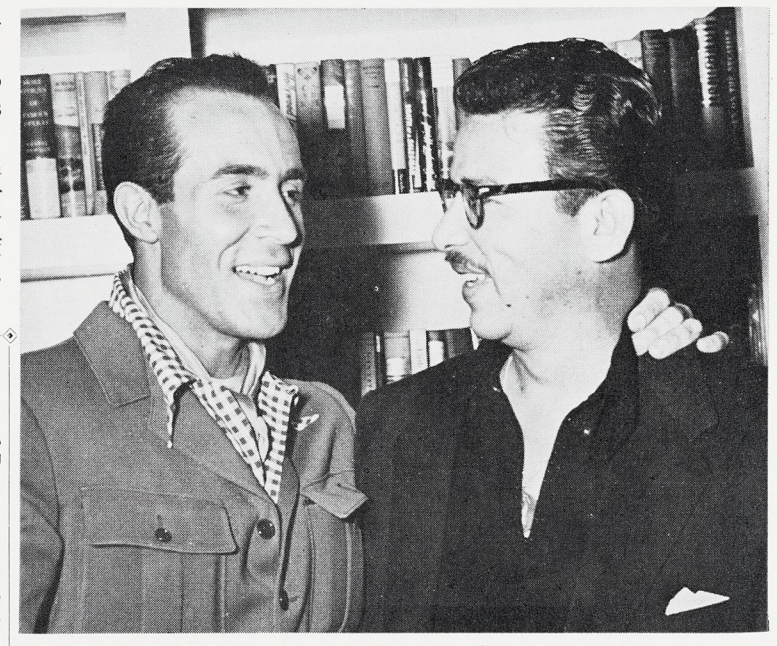
His career has included coverage of top sporting events, political campaigns and entertainment media. He has photographed many well-known personalities, including the winners of the last 19 Academy Awards competitions.

Contacts made in the course of one career led him to another—songwriting. He uses his language capability to do lyrics in Spanish or English, since converting from one to the other requires a complete revision of meanings.

He wrote Spanish lyrics for a Dean Martin hit, "Memories are Made of This" that won a gold record in Mexico. He and Jack Strumpf of Norair's Art department wrote English-Spanish lyrics for an all-time Herb Alpert favorite, "Cinco De Mayo."

Mr. Saldana now has 14 tunes out, including English lyrics for "Guadalajara," "Malaguena," and Spanish lyrics for "On the Street Where You Live" and many others. He has written both music and lyrics for four tunes being arranged for recording by Pedro Vargas and Juanito Mendoza.

Mr. Saldana, father of three boys, has enjoyed an interesting and rewarding journey.



LATIN FLAVOR — Dave Saldana (right), Norair photographer, and Ricardo Montalban, film star, share a laugh. Mr. Saldana doubles as photo editor of a Spanish language magazine.

Refunds for Ex-Employees Being Held

Northrop Corporation checks, ranging in amounts from $6 to $184, are being held for former employees who have terminated since February.

The checks represent refunds due former participants in the Employees' Savings Plans. Present employees who may know the whereabouts of these individuals are asked to suggest they contact extension 302 at Beverly Hills.

The following have checks being held for them: B. H. Fishburn, Richard Steele, R. L. Modzel, J. A. Castro, C. R. Marshall, Fidel G. Lango, Edward C. Marciniak, A. C. Vallerand, J. R. Miller, R. H. Nunnery, Ronald Hladek, L. V. Finister, F. O. White, jr., F. F. Sanders, H. E. Niles, James O. Collins, E. F. Chambreau, Nancy J. Chimenti, P. K. Lawhorn and E. J. Mohr.

Special Radio Offer Announced By Hallicrafters

The Hallicrafters Company has announced a special employee offer on radio equipment for all Northrop Corporation, subsidiary and affiliate personnel.

The special sale is in effect September 1 through December 24 and features such items as the CR3000 hi-fi component type receiver, clock radios, portable direction finders and code learning outfits.

The sale represents savings of up to 35 per cent off regular employee prices and up to 60 per cent off list prices.

Price sheets, order forms and other information are available at Personnel Activities offices throughout the corporation.

Forty-eight items are included on the special sale price list. West Coast deliveries of in-stock items take approximately 10 to 14 days from the date of receipt at Hallicrafters.

Cross Chosen to Play In World Chess Match

Robert Cross, a Norair senior engineer, has been selected by the International Correspondence Chess Federation as one of six men to represent the United States in the ICCF World Team Championships to be played from September 1968 through August 1970.

The championship, which begins each Olympic year, involves 25 countries and 150 players. Games are conducted through the mail with players indicating their moves to opponents by post card.

The United States will be playing in a section including England, France, West Germany, Japan, Sweden, Czechoslovakia and Bulgaria.

Mr. Cross was selected for the team because of his familiarity with international correspondence play; his membership in the Correspondence Chess League of America; his holding of master rank in the U.S. Chess Federation; and the recommendations of several prominent U.S. players.

An average chess game between experienced players usually goes 40 moves, according to Mr. Cross. For a game conducted by mail within the U.S., there is a gap of five days between moves. This period reaches 12 days for countries outside the Iron Curtain and 20 days for nations behind it.

CHESS MASTER Robert Cross, Norair, contemplates a move in a practice game for the International Correspondence Chess Federation's World championships. Mr. Cross has been selected by the ICCF to be one of six players representing the United States in the international competition.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Station Wagon, 1962 Oldsmobile, full power, & air, $850. 213-731-2964. A

Chevrolet, 1958, convt., $100. 213-326-1409. A

Pontiac, 1961, 2-dr., $335. 213-541-1568. A

Station Wagon, Volkswagen, squareback, $1,750. 213-870-1749. A

Corvette, 1967 Fastback, 4-spd. stick, AM-FM, 300 h.p., $3,600. 213-679-7840. A

Dart, 1964 GT, 4-spd., r/h, $950. 213-372-5367. A

Volkswagen, 1966, $1,400. 213-864-7560. A

Chevrolet, 1956, 2-dr., 265 eng., $350. 213-842-6958. A

Porsche, 1958 coupe, $1,500. 213-377-7391. A

TR-4A, 1967 convt., r/h, h/top, cover, $2,700. 213-679-2791. A

Truck, 1964 Chev. ½-ton, V-8, custom cab, p/s, p/b, std. shift, r/h, $1,397. 213-371-1096. A

Pickup Truck, 1956 Ford, all s/w gages, $850. 213-429-1114. A

Camper Van, 1967 Chevrolet, V-8, std. trans., $2,600. 213-672-4231. A

Station Wagon, 1967 Ford Country sedan, 6-pass., 390 eng., p/s, p/b, a/c, $2,695. 213-324-2992. A

Pontiac, 1963 LeMans, 326 V-8 eng., r/h, p/s, auto. trans., $850. 213-679-0918. A

Mustang, 1967, V-8, p/s, p/b, fac. air, r/h, $2,485. 213-644-4235. A

Cadillac, 1964 Eldorado convt., new Vogue tires, $2,500. 213-676-5162. A

Corvette, 1962, 2 tops, AM-FM, auto., $1,600. 213-534-1676. A

Ford, 1963 Galaxie 500, 4-dr. h/top, r/h, p/s, auto. trans., 390 cu. in. V-8 eng., fac. air, $995. 213-676-6707. A

Oldsmobile, 1967 Cutlass Supreme, 4-dr. h/top, p/s, p/b, a/c, r/h, auto. trans., $2,600. 213-327-0883. A

Rambler, 1960 American, 2-dr., 6 cyl., $300. 213-938-9788. A

Cadillac, 1955 4-dr. sedan, $200. 213-837-9767. A

Mustang, 1967 2 + 2, AM-FM radio, p/s, a/c, r/h, auto. trans., V-8, $2,300. 213-679-2039. A

Station Wagon, Ford, 1958, 390 cu. in., 350 h.p., $250. 213-675-7381. A

Chrysler 300, 1963, convt., full power, $750. 213-376-0070. A

Pontiac, 1964 Tempest, r/h, 3-spd., $800. 213-679-5101. A

Metropolitan, 1957, new hvy. duty batt., $250. 213-534-2752. A

Pontiac, 1965 Grand Prix, full power, a/c, $2,195. 213-373-3639. A

Chevrolet 210, 1957, 4-dr., reblt. 265, 3-spd., floor shift, $300. 213-674-0146. A

Austin Mini Cooper S, 1965, 1275 cc, 92 h.p., twin 1.5 s.u. carbs., extras, $1,800. 213-326-3645. A

Ford, 1937 coupe, Chev. powered, $650. 213-672-1738. A

Chevrolet, 1961 Impala, 4-dr., 283 eng., p/s, p/b, r/h, $560. 213-327-2033. A

Dodge, 1967 Dart, 2-dr., 6 cyl., auto., $1,850. Box 1701. A

Station Wagon, 1965 Fury III, fac. air, rack, auto., V-8 383, r/h, p/s, p/b, $1,900. 213-370-2234. A

Pickup Truck, 1967 GMC, ¾ ton, V-6, hydra., extras, warranty, $2,195. 213-378-4959. A

Oldsmobile, 1956 88, 4-dr. h/top, p/s, p/b, r/h, auto., $150. 213-321-2674. A

Sunbeam, 1965, Tiger, Edelbrook manifold, 4-bbl., cam, solids, posit., $1,995. 213-638-6960. A

Mustang, 1967 GT 390, 4-spd., air, power, d/brakes, extras, $2,895. 213-323-4257. A

Volkswagen, 1968, auto. trans., r/h, 4,000 miles, extras, $150 & take over $1,861.27 bal. 213-375-4423. A

Comet, 1962 2-dr., 6-cyl., $450. 213-374-6952. A

Volkswagen, 1967 Dune Buggy, h/top, tow bar, $1,700. 213-676-9488. A

Volkswagen, 1967 squareback, $1,950. 213-596-9748. A

Buick, 1963 Skylark, V-8, p/s, $995. 213-830-6163. A

Station Wagon, 1959 DeSoto, 9-pass., r/h, p/s, p/b, auto., $350. 213-644-1649. A

Ford, 1959 Ranchero, V-8, p/s, r/h, auto. trans., $300. 213-376-5482. A

Mustang, 1967 convt., V-8, auto. trans., p/s, p/disc brakes, new tires, $2,200. 213-377-9666. A

Corvette, 1966 convt., 327/350 h.p. eng., 4-spd., close-ratio trans., posi., AM-FM radio, $2,900. 213-379-8933. A

Station Wagon, 1959 Plymouth, V-8, full power, auto., r/h, $195. 213-324-9593. A

Automobiles For Sale

Oldsmobile, 1966 Cutlass Holiday cpe., auto., p/s, p/b, $2,300. 714-525-7379. A

T-Bird, 1956, auto., $1,350. 213-860-1807. A

Plymouth, 1954, $15. 213-370-8445. A

Station Wagon, 1960 Chevrolet, V-8, auto. trans., r/h, $350. 213-377-4251. A

Pickup, 1967 Chev. ¾-ton, custom cab, hvy. duty equip. w/8′ cabover Holiday camper, $3,500. 213-284-0768. A

Household Items For Sale

Stove, 36″, white, $25. 213-675-5695. B

Refrigerator, apt. size, $25. 213-671-9598. B

Sofa, 9′, grey, $45. 213-886-9252. B

Stove, Gaffers & Sattler, $30. 213-377-7317. B

Silver Service, 10-pc. by Derby-International, $95. 213-378-2564. B

Mixer, Sunbeam elec., seldom used, $15. 213-758-9182. B

Chair, custom designed recliner, maroon, $75. 213-671-8992. B

Bed Rails, child's, $4. 213-372-7875. B

Washer & Dryer, piggyback Westinghouse, $50. 213-671-6592. B

Dresser, modern walnut, 6-drwr., matching wood framed mirror, $40. 213-346-3751. B

Dinette Set, 4 chairs, extra leaf, bronze, formica top, $25. 714-879-7625. B

Refrigerator, Coldspot, $40. 213-545-3495. B

Range, Kenmore Classic, gas, fully auto., $175. 213-670-8837. B

Washer, Lady Kenmore, $30. 213-329-9915. B

Converti-Sofa, 84″, brown tweed, $35. 213-675-0860. B

Refrigerator, Admiral Deluxe, 11′ 3″, 2 yrs. old, $85. 213-370-7600. B

Dining Room Set, early American, 6 chairs, $40. 213-671-0560. B

Dining Room Suite, Duncan Phyfe, mahogany, 40 x 60 table w/3 12″ fillers, 62″ credenza, 4 chairs, grey & ruby stripe silk, pad, $125. 213-292-7603. B

Washing Machine, G.E., 3 yrs. old, $48. 213-675-5019. B

Chest-of-Drawers, provincial, 4-drwr., $5. 213-675-7316. B

Range, elec. Frigidaire, $30. 213-324-8758. B

Rug, 12′ x 15′, wool, light peach, $60. 213-676-3784. B

Sectional, 3-pc., beige, $25. 213-675-6016. B

Washer, G.E., needs work, $15. 213-644-2607.

Sewing Machine, White, $50. 213-321-6237.

Sewing Machine, Sew Rite, portable, $40. 213-677-7421. B

Clothes Hamper, child's, white wicker, $4. 213-835-3869. B

Sofas, 2, plastic, 6 ft. each, forest green, $25 ea. 213-675-6081. B

Table, maple refectory, 52x36, 4 chairs, $75. 213-831-1381. B

Furniture, 3 complete rooms of French provincial, $850 or sell sep. 213-373-1266. B

Stove, refrigerator, $70. 213-645-3279. B

Stove, 4-burner, gas, $45. 213-754-4510. B

Stove Bltins, copper, Tappan top & dble. ovens, $40. 213-328-7989. B

Mattress, box springs, twin size, $45 set, or $80. 213-323-8213. B

Washer, wringer type Speed Queen, w/stainless steel tub, $30. 213-329-3721. B

Miscellaneous For Sale

Pool Table, Slate, 3½ x 7, 4 custom cues, all access., $350. 213-370-8958. C

Canoe, 14′, hvy. canvas, 700-lb. cap., paddles & pontoons, $40. 213-894-6551. C

Motorcycle, 1960 Harley Davidson, 74 cu. in., many extras, $750. 213-866-2079. C

Field Glasses, 7x35, w/leather carrying case, $10. 213-430-2619. C

Tropical Planter, 7′ high, artificial, $29.50. 213-679-6256. C

Sailboat, 12′ Firefly class, sloop, rig, trailer, $595. 213-377-5862. C

Lot, in Running Springs, $4,750. 213-320-6975. C

Property, Klamath Forest Ests., Ore., 3.4 acres, $7,000. 213-675-8390. C

Record Player, RCA, 4-spd., $20. 213-532-7717. C

Tri-plex, 2 bdrms. ea., 9 miles from Northrop, carports, $32,500. 213-537-3098. C

Tube Checker, Heath Kit, emission-type, $35. 213-430-7388. C

Gun, 20 ga. pump Savage, 3-in-chamber Springfield Model 67F, 2 boxes shells, 4 yrs. old, $45. 714-635-8294. C

Camper Boot, made for 1965 Ford truck, $25. 213-371-2948. C

Pistol, Mauser 7.65 mm, .32 a. c. p., semi-auto., 1-pc. solid ivory grip, holster & ammo., $85. 714-539-2098. C

Bicycle, girl's 15″, $10. 213-532-7846. C

Record Player, portable, hi-fi, 3-spd. changer, $19. 213-377-5936. C

Encyclopedia, 1966 Americanas, 30-vol. set & Harvard Classics, 51-vol. set, both w/ walnut bookcases, $300. 213-323-1192. C

Honda, 1966, 305 Dream, $450. 714-893-2309. C

Trumpet, Olds Ambassador, w/case, $100. 213-645-0945. C

Drafting Machine, Vemco, used once, $100. 213-376-9600. C

Exercycle, $150. 213-377-8856. C

Home, 5-bdrm., 2 baths, heated pool, det. rec. rm. w/bar, grill, fireplace, cpts., elec. heat, dble. gar., $48,000. 213-379-1708. C

Miscellaneous For Sale

Aquarium, 20-gal., all access., wrought iron stand, $45. 714-530-1734. C

Bird Cage, 18″x45″, w/parakeet & access., $15. 213-375-0697. C

Bicycle Child Carrier, fits over 26″ rear fender, $4. 213-679-7734. C

House, 3-bdrm., cpts., dps., screened-in patio, close to Northrop, $24,950. 213-679-9891. C

Trailer, Apache, Buffalo Mesa model, 3 new tires, h/top, sleeps 6, extras, $895. 213-679-1011. C

Trailer, 10′ Field & Stream, sleeps 4, stove, refrig., $400. 213-671-6288. C

Home, 5-bdrm., 2-story, patio, fenced yd., cpt., dps., fireplace, bltins, 20 min. from Norair, $33,500. 213-632-3623. C

Mini-Bike, 3 h.p., fenders & lights, $85. 213-371-1096. C

Engine, for 1957 Plymouth, V-8, $125. 213-679-4464. C

Home, split-level, 2-bdrm., 1½ bath, Los Feliz area, $39,500. 213-663-883. C

Home, 5-bdrm., 2 baths, 3-car gar., patio, sprinklers, dps., a/c, near Northrop Ventura, $38,000. 213-889-8075. C

Apt. Units, 8 2-bdrm., on 2 lots, Culver City, $74,000. 213-837-0989. C

Honda, 1966 Scrambler 305, needs minor repair & tune up, $275. 213-675-7932. C

Swim Pool, Doughboy, 24″, round, $45. 213-324-3760. C

House, 2-bdrm., cpts., new paint & screen, $17,500. 213-671-8864. C

Apt. Units, 2, on big C-4 lot, $2,800 dn., & $65 mo. pymts. on bal., $14,000. 213-375-5885. C

Surfboard, 10′, Harbor Cheater, $70. 213-375-4940. C

Home, 2-bdrm., det. dble. gar., corner R-3 lot, 1 block from schools, $19,995. 213-644-3293. C

Tent, sleeps 6, umbrella type, $50. 714-637-6451. C

Home, 3-bdrm., family rm., 2 baths, small pool, $27,500. 213-379-2554. C

Honda, 1967 305 Touring, $425. 213-324-6155. C

Lot, 1 acre, residential, 3 miles from Lancaster, water, gas & elec., $5,500. 213-645-1514. C

Extension Ladder, 24′, wood, $10. 213-439-6432. C

Bicycle, 2 Royce Union, girl's, $12 ea. 213-335-3229. C

Wristwatch, 1968 Bulova, 17-jewel, never used, $35. 213-675-0777. C

Motorcycle, 1964 Yamaha, 250 cc, $350. 213-943-0753. C

Automatic Pilot, marine, Sperry MK IV, complete, $75. 213-831-9545. C

Home, exposed beam, 3-bdrm., 2 baths, 700 sq. ft. addition framed in, 5½% loan, $49,950. 213-375-9740. C

Home, 3-bdrm., 1¾ bath, 2 miles from plant, 6% financing avail., or will FHA, newly decorated inside & out, $30,000. 213-675-8829. C

Accordion, 120 bass, white pearl, 11 treble, 7 bass switches, $160. 213-375-3756. C

Surfboard, Gordon & Smith, model HY III, 9′6″, $70. 213-375-6397. C

Saddle, padded western, $150. 213-834-7535. C

Wedding Dress, long sleeve, lace, w/long det. train, size 8, junior petite, $70. 213-534-2290. C

Gown, aqua blue, empire style, lace & chiffon, pleated elbow length sheer sleeves, size 8, $15. 213-755-7255. C

Boat, 12′ fiberglass runabout, elec. start Johnson & trailer, $250. 213-378-4541. C

Executive Home, 3,000 sq. ft., near Las Posas Country Club, $46,000. 805-482-6740. C

Axle Gears, rear, 1965 Mustang, std. 2.8-1 ring & pinion, $25. 213-676-8817. C

Honda, CB 160 sports model, extras, $325. 714-635-0229. C

Encyclopedia, The American Peoples, 20-vol., 3-shelf bookcase, $50. 213-676-2661. C

Motorcycle, 1964, R-60 BMW, fully equipped, $800. 213-438-4801. C

Surfboard, Bing, 9′ 6″, green pigment, $70. 213-375-5097. C

Honda, 1968 P50, extras, $100. 213-674-4946. C

Speaker Cabinet, bass reflex, 31″ h. x 21″ w. x 16.5″ d., for 12″ or 10″ spkr., $15. 213-346-9701. C

Home, 3-bdrm., tri-level, h/wood floors, sprinklers, elec. kitchen, only min. from Anaheim plant, $25,950. 714-532-1361. C

Clarinet, Silvertone, ebony, lined case, $75. 213-371-3001. C

Home, 3 bdrm., 2-car gar., 2 baths, cpts., near Alondra Park, $42,500. 213-321-0020. C

Boat, 1966 16′ Glasspar, 80 h.p. Johnson eng., trailer, $1,600. 213-430-5252. C

Shotgun, 20 gauge dble., shells, $30. 213-823-2658. C

Surfboard, 9′ 4″ Rick UFO, speed skag, $75. 213-835-3301. C

Picture, Robert Wood, framed, 28″ x 44″, "Autumn Leaves," $8.50. 213-378-1863. C

Outboard Motor, 18 h.p. Evinrude, $175. 213-371-3620. C

TV Antenna, Winegard color, model SC-81; 20′ mast, 50 ft. shielded co-ax lead-in cable, $30. 213-788-9709. C

Manicurist, Lady Sunbeam, all attachments, never used, $9. 213-423-4837. C

Schooner, 45′ Staysail, hand-designed, $19,-995. 213-379-1744, 213-379-3967. C

Miscellaneous For Sale

Game Table, square, 32″ x 32″, black leather top, walnut, 4 chairs, $55. 213-326-0124. C

Aircraft, Cessna 140, C-90 300 S.M.O.H., all metal, IFR equipped, other extras, $3,200. 714-532-1510. C

House, in Huntington Bch. area, 5 yrs. old, 3-bdrm., 1¾ bath, take over 1st $14,650 at 6%, $5,000 dn., $22,500. 213-866-2785. C

Building Site, ½-acre in Agoura, horses O.K., water, elec. & phones, $8,500. 213-783-8271. C

Boat, 14′, fiberglass o/wood, w/trailer, $100. 213-532-6425. C

Lot, Green Valley Lake, paved road, 60 x275′, near lake, $3,500. 213-833-4191. C

Boat, 16′ Glasspar Citation, 80 h.p. Mercury, many extras, lge. whl. trailer, $795. 213-838-3336. C

Typewriter, Royal-Royalite, made in Holland, portable w/case, $20. 213-472-3400. C

Snare Drum, Gretsch w/8 lugs, $55. 213-325-3452. C

Sailboat, 40′, 1961 sloop, Lapworth designed, fully equip., many extras, $19,000. 213-679-7078. C

Sailboat, 9½′, Teacup class, dacron sails, sand dolly, $160; w/cartop carrying equip., $200. 213-321-1655. C

Aircraft, Cessna 195, 200 hrs. since major o/haul on 300 h.p. Jacobs eng., $5,750. 213-374-2915. C

Tent Trailer, Apache, 1963, sleeps 4, $300. 213-679-4863. C

Aquarium, 10-gal., stand & access., $12. 213-835-6492. C

Typewriter, Royal manual, noiseless w/stand, recently o/hauled, $50. Box 1702. C

Piano, Gulbransen, studio model, golden oak, $250. 213-676-8840. C

House, 3-bdrm., 2 baths, dble. gar., bltins, 5 min. to Northrop, take over 4½% G.I. loan, $27,500. 213-327-1797. C

Bicycle, boy's deluxe Schwinn stingray, 2-spd., $40. 213-676-3651. C

Lawn Equipment, Merry tiller, Scott spreader, roller aireator, $100. 213-320-7065. C

Tape Recorder, stereo, 4 track, Webcor Regent Coronet, tapes, extras, $85. 213-329-1705. C

House, 3-bdrm., 2 baths, bltins, cpts., patio, $27,500. 213-325-3724. C

Clarinet, standard b-flat Boehm system, $20. 213-676-5101. C

Cemetery Lots, 2, Green Hills Memorial Park, $300 ea. 213-326-3135. C

Beach Cottage, 1-bdrm., on ½ lot, 2 blks. from ocean, $25,000. 213-545-6171. C

Trailer, 17′ Terry, elec. or ice refrig., spare whl. & tire, 2 butane tanks & jacks, newly painted outside & in, $750. 213-326-9107. C

Cemetery Lots, 4 in Eventide Sect. of Green Hills Memorial Park, incl. perpetual endowment care, $1,560. 213-376-4677. C

House, 3-bdrm., 1½ baths, fireplace, lge. corner lot, 15x35 enc. swimming pool, sprinklers, $22,995. 213-343-6213. C

Fall, 100% human hair, worn 7 times, blond, $35. 213-373-1262. C

Boat, 16′ fiberglass Glastron, 1966, 90 h.p. out/bd. Mercury, used approx. 35 hrs., trailer, many extras, $2,300. 213-596-2542. C

Dog, great Dane, female, fawn, 2 yrs. old, $300. 213-752-2717. C

Uniforms, Hawthorne Christian School, boy's sizes 10, 12 & 6; girl's sizes 6X, 10 & 12, 75¢ ea. 213-672-2874. C

Wanted to Buy

Stove, 3-burner Coleman & lge. cap. ice chest. 213-396-3825. D

Gun, 45 automatic, U.S. Gov't issue. 714-538-8634. D

Tent Trailer, w/stove, ice box, & radio antenna, 10 meter, amateur, reasonable. 714-528-9227. D

Snow Skis, poles, & bindings. 213-674-8997. D

Adding Machine, elec. or manual. Box 1703.

Tires, 6.50x15 or 6.70x15. 213-423-1363. D

Dinette Set, 5 piece. 213-376-5810. D

For Trade

Seats, 2, in orchestra section for Cabaret matinee, August 29, trade for seats any other date. 213-379-8977. E

Free (To Be Given Away)

Kitten & young mother cat. 213-329-1018. F

Semi-Poodle, Rene′. 213-644-4339. F

Kittens, approx. 2 mos. old, & small dog, mixed terrier, approx. 6 mos. old. 213-672-0426. F

Rentals Offered

Home, 4-bdrm., 2 baths, stove, refrig., 2-car gar., children & pets, $165. 714-847-8140, 213-860-5288. G

Apt., 3-bdrm., 2 baths, f/place, bltins, cpts., dps., 2 blks. from Northrop, $225 mo. 213-676-9802. G

Condominium Apt, 4-bdrm., maintenance free, pools, recreation, $315 mo. 213-325-5609. G

House, 2-bdrm., Inglewood area, $150 mo. 213-823-1910, 213-823-5225. G

Apt, 1-bdrm., gar., unfurn., 2 miles from Norair, adults, no pets, $90 mo. 213-674-0755. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

From Huntington Beach Vicinity. Joan Vortouni, Norair, ext. 1174, 714-968-1412.

7:30 a.m. — 4:15 p.m.

Bolsa Chica & McFadden, Huntington Beach. Sandy Korkoski, Norair, ext. 1456, 714-892-6006.

Western & Pacific Coast Hwy., Lomita. Mornings only or both ways. Freda Wasule, Norair ext. 1255, 213-326-3813.

Sepulveda & Maple, Torrance. Vicki O'Donnel, Mariposa, ext. 4191, 213-534-3454.

8 a.m. — 4:45 p.m.

Ventura Fwy. & Moorpark Rd., Thousand Oaks. Donald L. Faye, Nort. Haw., ext. 517, 213-781-7317.

Rosecrans & Central, Compton. Carl Spears, Norair, ext. 1314, 213-636-7030.

Rides Offered

7 a.m. — 3:42 p.m.

From Huntington Beach Vicinity. Joan Vortouni, Norair, ext. 1174, 714-968-1412.

8 a.m. — 4:45 p.m.

Ventura Fwy. & Moorpark Rd., Thousand Oaks. Donald L. Faye, Nort. Haw., ext. 517, 213-781-7317.

Rentals Offered

Apt, 1-bdrm., unfurn., closed gar., $85. 213-756-0100. G

Apt, 2-bdrm., 1 mile from Norair, $130 mo. 213-675-5467, 213-676-7423. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Apt, 3-bdrm., unfurn., bltins, adults, in Inglewood, $175. 213-674-1769. G

Exec. Apt, 2-bdrm., 2 baths, 1,450 sq. ft., in Inglewood, $195 mo. 213-670-6084. G

Apt, cpts., dps., bltins, all elec., closed gar., 20 min, to Norair, 1 & 2-bdrm., furn. & unfurn. $95-130. 213-375-9397, 213-375-2091.

Rentals Wanted

House, unfurn., 2 or 3 bdrms., 1½ baths, cpts., dps., adults, no pets, $150 to $175 mo. 213-323-1580. H

Personals

Wanted free, for 2 deserving families, 1 used but working refrigerator, any size, 1 dresser, 2 twin beds, springs & mattresses or 1 set of bunk beds, Norair Welfare Coordinator, ext. 4786. L

I wish to express my sincere thanks to my friends for their kind deeds & expressions of sympathy in the loss of my mother, Nellie Spring. LOIS AKERS. L

I wish to thank my friends at Norair for their kindness & tributes to the memory of my wife. DAVE RANKIN. L

Our sincere thanks to all our friends at Northrop for their condolences over the loss of wife & mother, Betty Jo Jensen. BOB JENSEN & FAMILY. L

Share home in Anaheim, with or w/out board, swim pool, pvt. bedroom. 213-828-4432. L

My family & I wish to express our thanks & appreciation for the thoughtfulness & kindness extended to us during the recent illness & passing of my husband & our father. MRS. THEODORE D. FERRI & FAMILY, DARLENE M. FERRI. L

I wish to express my deepest appreciation for the thoughtfulness given me by friends at Northrop over the loss of my father, C. C. Robertson. C. A. ROBERTSON. L

My family & I wish to thank everyone for the thoughtfulness & kindness extended us at the recent loss of our son & brother in Vietnam. MR. & MRS. W. H. CHANEY & MRS. J. K. LYNCH. L

For Sale or Trade

Auto Stereo, 4 or 8 track, dual amp, $45 or trade for bicycle, men's lightweight. 213-376-3525. M

Hot Water Heater, elec., 220 volts, 40-gal. cap., $15 or trade for power mower. 805-495-9647. M

Grease Gun, portable, & wet sander, auto., both air-powered, $60 or trade for .22 auto. pistol. 213-941-1865. M

Continental, 1963, convt., low miles, $1,695 or trade for Mercedes, VW or small American compact. 213-464-1084. M

Honda, Scrambler 160, reblt. to 175, $275 or trade for smaller Honda. 213-328-7048. M

Reservations Due For Hawaiian Tour

Reservations are now being accepted at all Northrop Personnel Activities offices for the annual NRC-sponsored yearend Hawaiian holiday.

Two tours are available. An eight-day excursion departs December 25 and returns January 1. Total cost: $330 per person. For those who can apply vacation time, a special 12-day tour is also available, departing December 21 and returning January 1. The cost: $385 per person.

Both tours will feature travel aboard Pan American Airways.

PICI—C-5 Production Inspection Earns 'Well Done' From Lockheed

(Continued from page 1)

Nortronics will continue as a prominent member of the Air Force's C-5 Galaxy manufacturing team."

The purpose of PICI was to give Lockheed the opportunity to inspect and verify all aspects of Nortronics operations which have a direct bearing on C-5 INE systems meeting Lockheed's stringent performance and quality requirements.

Individual members of the Nortronics PICI team were singled out by Mr. Haberman who congratulated the Navigation department on its "excellent attitude during PICI." The Lockheed team noted that, "Nortronics has jumped right to the problem, wherever there has been one. The entire team," continued Mr. Haberman, "demonstrated their resolve to assure that the INE portion not only could but would 'pass' PICI. With minor exceptions, this proved to be a reality."

The Nortronics PICI team, under the supervision of A. W. Brock, includes Chairman Neale Ebright, Configuration Management; Sherm Allen, Quality Control; Bert Diamond, Manufacturing; Lowell Martindale, Contracts; Wally Pfeil, project engineer; Jim Ryan, Configuration Management; Paul Vance, program office; and Marv Zuckerman, Configuration Management.

Lloyd Balsam, Nortronics C-5 program director, added his own "thanks and congratulations for a good job well done."

Crafts Session Scheduled for Thursday Night

A workshop in the crafting of distressed wood plaques is being sponsored for one evening only by the Anaheim Women's Club, according to President Donna Robison.

The event is scheduled for tomorrow at 7:30 p.m. at the NRC Clubhouse in Fullerton. Instructor for the evening will be Mrs. Carol Whipple, well-known crafts instructor in the Anaheim area. Refreshments will be served.

Admission is free and open to club members and their guests. The only charge will be for supplies for those who participate in plaque-making.

The technique involves the distressing of a piece of pre-sized wood in the shape of a plaque.

NOONTIME BRIDGE FOURSOMES like this one are increasing in number at Anaheim. In this session, the director of noontime bridge, Jerry Winterton, senior reliability engineer, observes as summer tourney champs Lew Farwell (left) and Lyle Maxey strive for a contract against opponents Margaret Skeeles (left) and Mary Polk.

BRIDGE AT ANAHEIM

Tricks, Bids Keep Lunchtime Busy

Forty people in Anaheim would rather play bridge than eat. Almost.

They are the Nortronics employees in Y-3 and Y-12 who mix food and finesse, taking bites between bids, while gathered for noontime duplicate bridge sessions.

It all started about two-and-a-half years ago when Jack Kirkeby, a contracts requirements engineer in Configuration Management, and a couple of friends decided that during lunchtime there was time to make a few bridge contracts as well. In no time at all they had a fourth and the bidding was on. Before the week was out, 24 people were playing six hands a day during the noon break and Jack found himself the unofficial director of the activity.

Now the number of noontime duplicate bridge enthusiasts has doubled and the end is not in sight. Jack has since relinquished the handling of the arrangements to Jerry Winterton, a senior reliability engineer. Just recently Lew Lantz, of the Payroll and Timekeeping section in Y-12, has gotten four tables organized.

"The secret to keeping things going," says Jerry, "is to move the people around as little as possible, make it convenient for all concerned and leave Friday open for those who'd like to go out for lunch."

Jack paired with Dan Almich to win one of the first competitions. Lyle Alexander and Frank Sartanowicz came out on top last winter and the spring champs were Ken Phillips and Chuck Stevens. In the 14-week, seven-table summer tourney just completed, Lew Farwell and Lyle Maxey took top honors.

Duplicate bridge at noon is sponsored by NRC.

New President Takes Office in Management Club

J. N. McKenzie, TEAMS' deputy program manager, has been installed as the new president of the Nortronics Management Club, succeeding F. S. Pine.

Mr. Pine left Nortronics this month to assume the position of Personnel officer at California State College in Fullerton. Mr. McKenzie has been serving as vice president.

A. E. Blythe moved up from sergeant-at-arms to the position of vice president. V. H. Gausepohl, jr. and G. A. Nelson retained their posts as secretary and treasurer, respectively. John McIntyre is the new sergeant-at-arms.

The moves were made by the membership at the club's vacation dinner meeting at Long Beach last week. Guest speaker for the evening was Dr. William J. Teague, vice president of Pepperdine College in Los Angeles, who dealt with the topic, "Reflections and Patterns of Thinking About Money." Approximately 250 members were present.

WOMEN'S TWILIGHT GOLF match play at Anaheim finished with Norma Schrumpf and Molla Clark (left), edging out Lola D'Andrea and Dorothy Nissly (right). Twenty-four ladies from Nortronics competed in the tourney.

ANAHEIM WOMEN'S GOLF CHAMPS NAMED

Match and medal play in the NRC Women's Twilight Golf League at Anaheim has concluded, according to Pat Richards, women's golf commissioner.

Molla Clark and Norma Schrumpf won over 22 other golfers as the ladies competed for 11 weeks. Six foursomes played over the nine-hole, 29 par Brea Golf Course.

Molla is a key punch operator in Receiving. Norma is a secretary in Security.

The winners edged-out, by one-half point, Lola D'Andrea, of Product Assurance Planning and Dorothy Nissly, secretary in Manufacturing-Materiel Control.

Each of the four received a trophy in recognition of their respective wins.

ANAHEIM NRC BOWLING LEAGUES RESERVATIONS BEING ACCEPTED

Winter bowling leagues are now being formed at Anaheim. Reservations are being accepted for mixed leagues and a five-man handicap men's league.

A mixed majors scratch league for bowlers with an entering average of 600-620 is open for two men and two women per team. A mixed fives handicap league of teams comprising either three men and two women or three women and two men is also open. Both of these leagues will meet at the Carter Bowl and play every Tuesday at 6:15 p.m. beginning September 10.

The five man handicap men's league, with a maximum of eight teams, is set for Thursdays at 6:15 p.m. at the Carter Bowl beginning September 12.

Another mixed league of scratch fives will be formed for bowlers with an entering average of 700-750 if there is a sufficient number of interested bowlers. Arrangements are for this league to meet Tuesdays at 9 p.m, at the Garden Square Bowl.

Vito De Paul, NRC bowling commissioner, has announced that there are a limited number of lanes available for the leagues mentioned. First entries will be given first preference. Registration is being handled at the Personnel Activities office.

IT'S ROUTINE TO THEM but the movement of people, parcels and things is critical to the Nortronics business operation. In an average day, Bill McCann (left), will handle dozens of urgent items like this delivery from Shipping Leadman Earl Simpson to a vendor; Gary Latham (center), will transmit rush orders and re-routing to his men in the field; and Sonny Herron (right), generally has his hands full keeping things moving to and from Palos Verdes. An enviable accident-free record has been logged by drivers.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 18 | September 11, 1968

Better Ideas Bring Cash To Workers

Twenty-one Nortronics employees received cash in August for 23 ideas accepted in Northrop's Suggestion Awards Program administered by Larry King.

A $112 check went to Joseph Martin of Anaheim's Stringer Receiving and Fabrication group. Mr. Martin suggested using special plastic lens glasses which reduce the time required to adjust the eyes for black light inspection. His idea is in use at all Nortronics facilities.

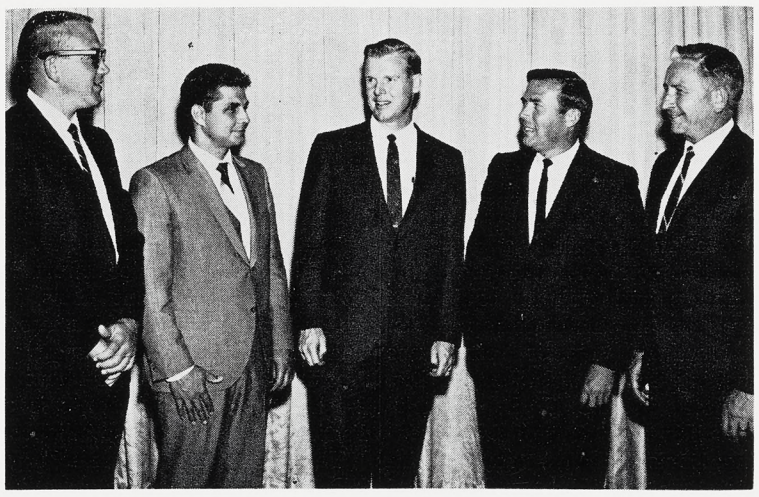
C. H. Beezley of the Machine shop at Anaheim won $105 by requesting that pilot holes be deleted from a weldment because they complicated a subsequent operation. His suggestion was a time-saving idea applied to the Hawk Launcher program.

Mr. Beezley

Other awards ranged from $10 to $99. They were presented to Mike Ciavarella, Hazel Dixon, Maryanne Miller, L. E. Reynolds, Ray Smith, S. E. Wilson, jr. and S. L. Zaic of Hawthorne.

Anaheim employees receiving awards were A. B. Arroues, Gordon Eggers (three awards), J. P. Flanagan, L. B. Ford, sr., N. A. Lamitz, J. E. Linn, G. J. McDowell, R. P. Moniz, R. E. Moore, Todd Moore, S. M. Schuler (two awards), and M. L. Shirer.

In the past year, according to Mr. King, the 26 most active suggesters have each collected from two to six awards for a total of 73 ideas worth over $5,000 to the employees and many times that amount to Northrop.



NEW MANAGEMENT CLUB OFFICERS were installed at last month's dinner meeting of the club in Long Beach. J. N. McKenzie (center), is the new president. Other officers are, from left, John McIntyre, sergeant-at-arms; V. H. Gausepohl, jr., secretary; A. E. Blythe, vice president; and G. A. Nelson, treasurer.

Families To Be Welcomed At October Family Day

Family Day — an opportunity for family and friends of Nortronics employees to visit Northrop facilities — will be observed throughout the division on Sunday, October 20.

Nortronics' guests will be welcomed anytime between noon and 3 p.m.

It will be the first time in two years that there has been a Nortronics Family Day. In October 1966, the Anaheim department drew more than 5,600 to their observance.

A relatively free-movement atmosphere will prevail as employees will guide their families to interior work areas and grounds. Designated hosts will be on hand with display boards to explain operations at Nortronics, answer questions and aid in the direction of guests. There will be brochures, souvenirs and refreshments for the thousands expected to attend.

Bill Burch, Nortronics' chief of Employee Relations, is coordinating all arrangements for the afternoon activity. He points out that employees are invited not only to conduct guests through their own work areas but to any area of interest which is part of the Family Day.

In line with this, Dick Carroll, Industrial Relations staff assistant at Norair, has encouraged Nortronics employees to feel free to bring their guests to visit Norair's 747 production line and the F-5 and T-38 production areas in Hawthorne, between noon and 4 p.m.

Frederick Stevens, vice president and Nortronics general manager, has added:

"I would like to extend my personal invitation to all our employees and their families to attend Family Day. Nortronics welcomes this opportunity to open the doors to its families so that they can, in some measure, share the pride we all have in our products and facilities."

Northrop Carolina Linked With Nortronics Division

Northrop Carolina, Inc., a wholly owned Northrop subsidiary, is being brought into closer operating relationships with the Nortronics Division as a means of enhancing the growth of both organizations.

Assignment of responsibility for the direction of Northrop Carolina, Inc., to the Nortronics Division was announced this week by President Thomas V. Jones.

"Since Northrop's acquisition of Northrop Carolina, Inc., in 1965 it has been our plan, at the proper time, to bring that organization into a close operating relationship with the appropriate operating units of Northrop. The excellent performance of Northrop Carolina, Inc., and its prospects for further growth have now made it logical to move in that direction," Mr. Jones said.

The new organization alignment was made as the result of joint studies by the Corporate staff, George Douglas, president of Northrop Carolina, Inc., and Frederick Stevens, Corporate vice president and Nortronics general manager.

Implementing the closer working relationship of Nortronics and Northrop Carolina, Mr. Stevens announced several new personnel assignments.

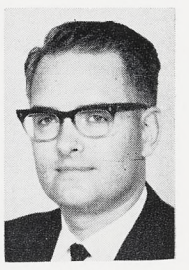
Frank Lynch, vice president and manager of the Anaheim department, and Ross Miller, vice president and manager of the Navigation department, were each named vice presidents and assistant general managers of Nortronics.

Mr. Lynch will be responsible for coordinating the activities of Northrop Carolina, Inc., as well as the Anaheim, Needham and Northrop Support Operations departments. Mr. Miller will be responsible for coordinating the activities of the Navigation, Northrop Systems Laboratories and Precision Products departments.

J. M. Ricketts was assigned duties as acting manager of the Anaheim department, and Lynn Kaufold was assigned duties as acting manager of the Navigation department.

Environmental Engineer Earns Higher Degree

A Nortronics environmental engineer at Hawthorne has received the degree of engineer in mechanical engineering and is one of 17 Nortronics employees who have benefitted from Northrop's Educational Refund Plan.

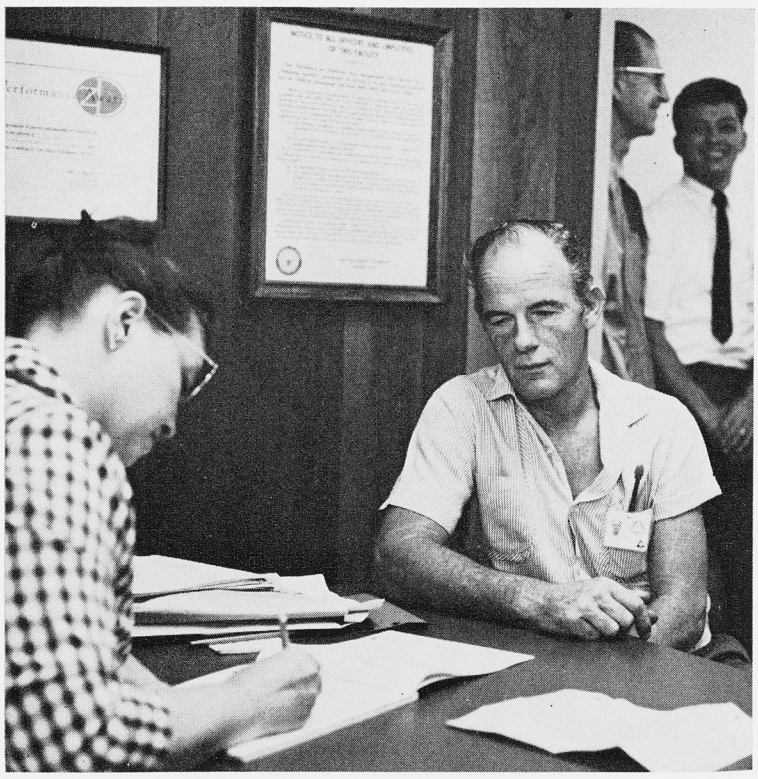


Mr. Blake

Ernest Blake, a Northrop employee for 10 years, received his degree, sometimes referred to as the "professional" degree, in January after spending the last five years attending night classes at the University of Southern California. This period of study is the equivalent of two full academic years of graduate study.

It was erroneously reported in the Northrop News of August 14 that Mr. Blake had recently received his bachelor's degree. Actually, he received his B.S.M.E. in 1958 and his M.S.M.E. in 1963, the latter also under the refund plan.

Recipients of the engineer in mechanical engineering degree must complete at least 60 units beyond the bachelor's degree and prepare a thesis. It is of a level higher than that required for a master of science degree.



VOTER REGISTRATION was conducted last week for Nortronics employees in Anaheim by Mrs. Margie Brown (left), deputy registrar. Robert Miers, Anaheim machinist, is representative of the many employees who registered, thereby becoming eligible to vote in the November general election.

Scores Utilize Handy In-Plant Voter Service

More than 475 Nortronics employees who were previously unable to vote in the November general election, because of not being registered, are now able to do so as a direct result of Northrop's in-plant voter registration drive.

Approximately 175 of these registrations occurred in April prior to the primary; the additional 300 registered at Nortronics between August 28 and September 5.

The purpose of the service, provided by Northrop in conjunction with the voter registration offices, was to make the procedure as simple and convenient as possible for every unregistered voter.

Similar in-plant voter registrations at other Northrop facilities found more than 1,229 persons utilizing the service at Norair Division and approximately 76 at Northrop Ventura.

BLOOD DONOR DAY at Anaheim was a huge success as the six-bed unit from the Los Angeles and Orange County chapters collected 151 pints from donors such as Donna Robison, Employee Services secretary. Mrs. Ann Murphy, R.N. (left), was one of those who attended the donors. Esther Jones, R.N., (right), Anaheim Medical unit, coordinated the program and scheduled the donors.

NORTHROP NEWSMAKERS

D. D. Gregor, Norair, has written a paper titled "The Impact of Maintainability Analysis on Aicraft Design" for presentation at the October 7-11 meeting of the Society of Automotive Engineers, Aeronautic and Space Engineers and Manufacturing meeting in Los Angeles.

* * *

Bertram G. Ryland has joined Warnecke Electron Tubes, Inc., as a staff consultant to **James W. Schwartz,** general manager. Warnecke is affiliated with The Hallicrafters Company, a Northrop subsidiary.

* * *

Reece Thompson, Norair, has presented a paper titled "Automated Production Planning System at Norair" at the Santa Monica Bay Chapter, American Society of Tool and Manufacturing Engineers' technical meeting.

* * *

Barny Gaiennie, Norair director of Manufacturing Research and Development, was the subject of a feature article in a recent issue of Metal Working News. Titled "Norair's Gaiennie —Man With a Mission," the article discussed present and future possibilities in machining and working with metals.

* * *

Richard C. Anderson, the son of **James C. Anderson,** Norair, has been promoted to sergeant in the U.S. Marine Corps. Sgt. Anderson is serving with the Seventh Engineer Battalion, First Marine Division, in South Vietnam.

* * *

Waldo W. Neikirk has joined Northrop as director - Financial Planning and Controls, reporting to **J. Grant Macdonnell,** vice president and controller.

Mr. Neikirk holds an M.B.A. degree from the Harvard Graduate School of Business and comes to Northrop from a subsidiary of Hughes Aircraft Company.

* * *

Verlin Seaman, ext. 2131; **Anne Fitzgerald,** ext. 1201; and **Carol Clement,** ext. 2721; all of Norair, are accepting reservations from Northrop secretaries interested in attending an orientation dinner of the Airborne Chapter, National Secretaries Association. The dinner will be held at the Inglewood Golf Course Restaurant September 26.

Employee Gifts Exceed Pledges To Charity Fund

Generous Northrop Corporation employees have given record amounts in support of community health and welfare agencies over the past year through their contributions to AID-NORAID.

Final 1967-68 fiscal year tabulations indicate employee contributions topped $333,672. This not only exceeded the previous annual high of $300,000, but also surpassed the $329,000 pledged at the beginning of the year.

Since joining the AID concept of community giving in 1955, Northrop employees have contributed $3,207,026.

A majority of funds given by Northrop employees is used to support 13 major causes to which AID-UNITED GIVERS funds are allocated. The remainder is returned to Northrop for use in its own internal NORAID program set up to assist personnel in time of need.

Northrop employees support both efforts through weekly payroll deductions.

Page to Study Communications Systems at UC

The University of California has awarded a contract to Page Communications Engineers to conduct a study to determine how modern communications can best serve its nine-campus system in the 1970's.

Page, a Northrop subsidiary, will study telephone, teletype, data transmission and television services linking the campuses. A plan for a management report system permitting better direction of the entire communications system will be included.

Management of operating procedures will be reviewed on all campuses with detailed reports prepared for Berkeley, Los Angeles, Davis and San Diego campuses.

The study, to be completed in December, will be carried out in cooperation with the Pacific Telephone and General Telephone companies.

HALLICRAFTERS Company display at the recent Los Angeles WESCON show drew a steady stream of visitors to see the many Hallicrafters radio and communications items available through the Northrop subsidiary.

VENICE FACILITY

Northrop Job Center is Now Open

Northrop's new Venice facility for recruiting and training previously unemployable people opened its doors to the first class of 51 people on September 3, according to L. H. Walton, program director. Succeeding classes will start at six week intervals. It is expected that some 140 people will enter training under the program over a 15-month period.

The 11,000 square foot Venice facility, called the Northrop Job Center, is staffed with about 10 remedial and vocational education specialists, and administrative personnel. Classroom furnishings and training equipment are from surplus Northrop stocks.

Northrop Norair employees making up the staff, besides Mr. Walton, include C. L. "Chuck" Beuchat, supervisor of skills training; Louis Williams, vocational instructor; and E. R. Goodrum, Program Planning and Proposals. Jack Cushman, of Norair General Personnel Administration, is interviewing prospective trainees, and Dr. Richard J. Krebsbach is giving pre-employment physicals.

Important help in recruiting and interviewing prospective employees for the program is being provided by the Venice Westside Occupational Development Center, a volunteer community group, and the State Employment Service.

Carried out under a contract from the U.S. Department of Labor, Northrop's Venice effort is intended to implement plans of the National Alliance of Businessmen, established at the request of President Johnson. Northrop President Thomas V. Jones is a district chairman for the alliance.

The first class and others to follow will receive basic remedial education and vocational training to achieve the classification of aircraft structural assembler. Job assignments will then be made to Norair assembly facilities.

Students will be on the company payroll, with normal fringe benefits, as soon as they begin training. When necessary, they will receive transportation and be provided with minor medical care such as corrective eye glasses, hearing aids, and dental work.

To qualify for the program, a recruit must be a needy person, as defined by the Labor Department, and either unemployed or under employed.

A third stipulation is that the person must be either (1) under 22 or over 44 years of age; (2) a member of a minority group; (3) a high school dropout; or (4) handicapped.

NEW OFFICERS participating in Northrop's Education With Industry program, administered by Harry Blocher (left), supervisor of Customer Training at Norair, are, from left, Captains Keneth Hughes, Lee Whitley, David Martin and C. B. Lowery, jr. Mrs. Pat Altieri, Norair Badge Control, accepts their applications for badges.

All-Northrop Luau Planned For October 5

Northrop Recreation Clubs have joined forces to reserve the famed "The Tikis" party center in Monterey Park for an all-Northrop Luau October 5.

Tickets, at $6 per person, are now available through Personnel Activities offices throughout Northrop facilities.

The price includes admission to the lavish four and one-half-acre layout that includes many island motif features, special island entertainment, dinner and dancing.

Regulations restrict admission to adults 21 years of age or older, however.

This is the second NRC Luau at this location.

Sea Anglers Pick Monthly Winners

Winners of the July NRC Sea Angler's fishing derby are Rick Wilson, first; William Kron, second; Don Caughlin, third; and Curtis Fuller, fourth.

Winners of the albacore derby are Stan Eckland and David Cribbs, tie for first; Pete Stanzions, third; and Andy Krauszer and Bob Wilson, tie for fourth.

USAF Officers Arrive For Industrial Training

Four U.S. Air Force officers have been assigned to Northrop for 1968-69 by the Air Force Institute of Technology in continuation of the Education With Industry program, according to Harry Blocher, program administrator and supervisor of Customer Training at Norair.

The officers are Captains Keneth Hughes, C. B. Lowery, jr., David Martin and Lee Whitley.

During the 10-month assignment the officers will concentrate on studying the management aspects of Northrop's business operation. Participating in the study will be the Corporate office and the Norair, Nortronics and Ventura divisions.

In order to be eligible for the EWI program, officers must be screened by an AFIT team and then accepted by the company prior to assignment.

The total AFIT program has more than 130 officers assigned to 40 industrial organizations. Northrop has been a participant since 1951 and has had 37 alumni.

'HARVEST OF GEMS' OPENS OCTOBER 19

The NRC Gem and Mineral Club's ninth annual "Harvest of Gems" show will be held October 19 and 20 at the Hawthorne Memorial Center, according to Bill Greenwood, show chairman.

The show will exhibit a variety of stones, minerals and cutting material, as well as collections of handcrafted jewelry and mountings and polished or faceted gems.

The show will conclude with a drawing for a portable television set, three $100 bonds and a camera.

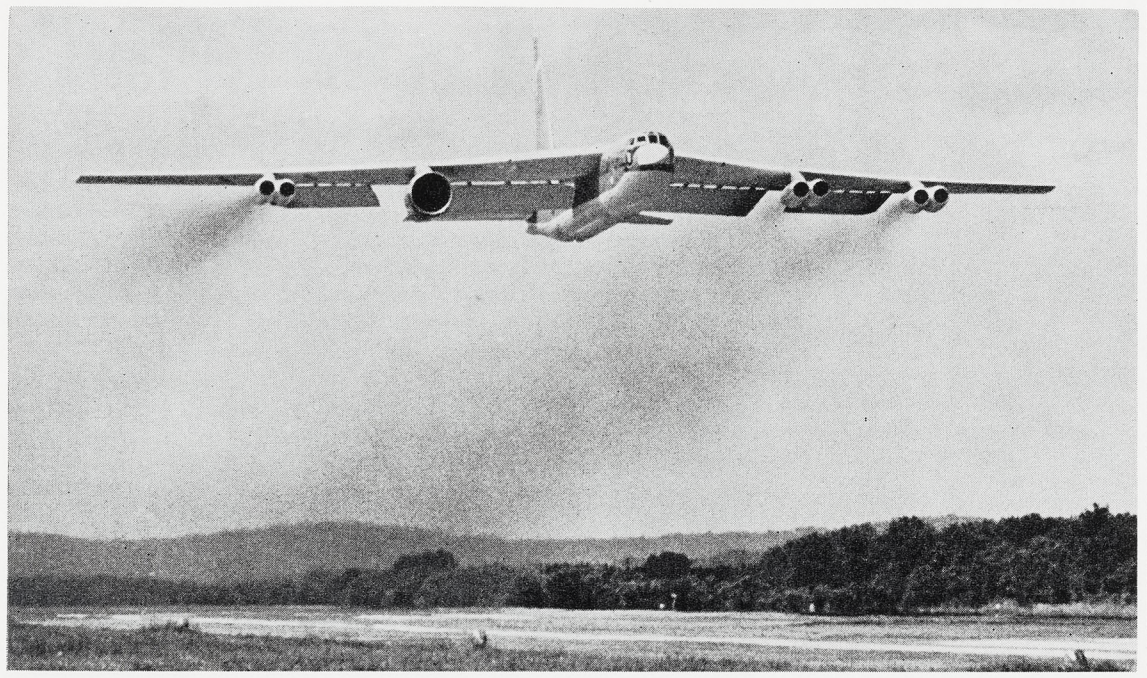
Several dealers in lapidary materials, findings and jewelry will be in attendance for those who wish to shop while at the show.

Disneyland Night Tickets Available

The Association of the United States Army has invited Northrop employees to join in its annual Disneyland Night next month.

The event will be held from 8 p.m. to 1 a.m. on October 18, and 1,500 tickets are available at $3.75. This price covers admission and unlimited use of all rides.

Employees of all divisions and facilities are invited, association officials said. Tickets are on sale at all Personnel Activities outlets.



UNIQUE TEST BED above is a modified Boeing B-52 bomber with the new JT9D powerplant mounted in left inboard position. JT9D will power the Boeing 747 jetliner. Note absence of exhaust smoke, a special JT9D feature. It is also quieter than engines in commercial use today. Each JT9D will develop 43,500 pounds of thrust.

ABOARD B-52

Boeing 747 Engine in Flight Tests

(Editor's Note: Contributions to the success of the Boeing 747 jetliner program within Northrop Corporation are well-known to all employees. Other companies are also taking impressive steps in creating a new era in air travel in the 747. The following special report has been prepared to further acquaint employees with the scope of the total 747 Program.)

Pratt and Whitney Aircraft, a division of United Aircraft Corporation, has embarked on a rigorous airborne test program for its JT9D turbofan engine which will power the 747.

In addition, it has delivered the first four flight engines for the initial superjet to be rolled out this fall as well as ground test engines.

Each advanced design JT9D will produce 43,500 pounds of thrust for a total of 174,000 pounds, powering the 490-passenger plane to maximum speeds over 600 miles per hour.

The JT9D has an eight-foot diameter inlet, almost twice that of the 18,000-pound thrust JT3D engine which is the workhorse of the current long-range Boeing 707 fleet.

In spite of its size, the JT9D is quieter than current jet engines and is smokeless in operation. It weighs 8,430 pounds and is only 128 inches long, six inches shorter than the JT3D.

Pratt and Whitney has begun flight tests on the JT9D expected to average two or three flights a week, continuing for a period of several years.

The tests, utilizing a B-52E leased from the Air Force, are an integral part of the over-all engine development program. The objective is to develop the desired performance and operating characteristics and to continue work for growth versions of the engine.

Test flights provide opportunities for test and development under actual flight environment conditions. Such conditions usually cannot be simulated in altitude chambers used in ground tests.

The JT9D test engine is suspended from the right wing of the B-52 in place of the bomber's two standard inboard engines.

Size and availability were the two most important factors which resulted in the selection of the Boeing-built B-52. It was necessary to obtain an aircraft large enough to accommodate the eight-foot diameter of the engine in a typical, pylon-supported, wing-mounted nacelle, in order to duplicate closely the 747 installation.

Further, the plane had to be capable of handling the thrust levels of the test engine without unusual control problems. The JT9D, which develops 16,000 more pounds of thrust than two of the standard B-52 powerplants, is set up to balance with the thrust of the other engines on takeoffs and landings.

However, at higher, in-flight power settings, the pilot simply has to accept the asymmetric thrust which results from the JT9D's greater "muscle."

Pratt and Whitney has been a leader in commercial jet engines since its engines powered the first U.S. commercial jet, the Boeing 707, into flight. The division is also noted for its military jet engine work.

BIG PLANE, BIG POWER—Pert Sandy Brier of Pratt and Whitney Aircraft, has room to spare as she poses in the eight-foot diameter inlet section of one of the powerplants that will propel the Boeing 747 jetliner.

Help Sought In Locating Ex-Employees

Thirty-five former Northrop employees are being sought to inform them of vested retirement rights under Northrop's Retirement Plans.

Present employees knowing the whereabouts of these individuals are asked to have them contact ext. 302, Beverly Hills.

Sought are Charles L. Allen, Gerald H. Balzar, Arthur R. Benson, J. G. Brooks, Vincent Bruscia, G. W. Christensen, R. W. Clark, V. E. Cull, C. A. Ferguson, C. T. Fromer, Henry L. Hansen, J. L. Hill, sr., R. B. Hughes, Harold L. Jones, I. Kangas, Harold W. Kennedy.

R. D. Kinkade, Lawrence T. Kveen, Diana C. Lawver, Mildred L. Lorenz, John M. Lynn, David L. Mattix, jr., M. P. McGaffin, Harry Manning, Glenn L. Metz, Thomas D. Morel, Joe Peter Oberta, L. N. Peterson, Edgar U. Peyronnin, Mildred A. Rusch, George J. Sepal, Cecil N. Skelton, Mortimer Smith, Reuben W. Stenman and Evelyn B. Stephens.

Northrop Earnings, Sales Again Set All-Time Highs

Northrop Corporation's earnings and sales for the fiscal year ended July 31 set all-time highs for the third year in succession, Thomas V. Jones, president and chairman, has announced.

Net earnings for the year of Northrop's diversified aircraft, communications, and electronics business totaled $15,740,235, an increase of 25.2 per cent over the previous year's earnings of $12,567,646. Earnings per share were $3.26, against $2.68 a year earlier, an increase of 21.6 per cent.

A year ago, earnings per share were reported on the basis of a weighted average of shares outstanding over the year. On this basis, the earnings reported would be $3.33 per share as compared with the $2.86 reported a year earlier.

Sales and other income for the year amounted to $486,838,213, compared with the previous year's $470,706,838. Backlog of orders totaled $718,000,000, also the highest in the company's history. Backlog a year earlier amounted to $604,000,000.

"Contrary to what might be expected, the increased earnings and sales were largely independent of our part in the Boeing 747 airliner project," Mr. Jones said. "While the 747 is a very large project, it has been in its build-up phase and is only now beginning to contribute to sales and earnings.

"Over the past five years our total net earnings have been on a growth trend that averages better than 20 per cent a year," Mr. Jones said. "Based on programs in hand, we look for a continuation of this trend. We expect sales and earnings to continue to increase in the current fiscal year.

"Our military aircraft will continue to contribute to sales and earnings. Deliveries of 747 fuselage sections will increase substantially in fiscal 1969, 1970 and 1971. Over the longer term, the area that is most likely to exceed our expectations is our worldwide business in communications and information systems and in associated electronics."

Barry Harvey Sweeps Canadian Cycle Event

Over the Labor Day weekend, Barry Harvey pulled off what must rank as one of the biggest sweeps in history in the field of top bicycle riding competition.

Mr. Harvey won all four gold medals presented at the Canadian National Championship races at Winnipeg. They represented first places in the 1,000 meter time trials and sprint, the 4,000 meter individual race and the 10-mile scratch event.

In the two 1,000 meter events, Mr. Harvey defended the two gold medals he won in 1967 in the same championships.

Taking part in the 1968 event were the top 30 cyclists from throughout Canada, many of whom will compete in the Olympics later this year in Mexico.

Mr. Harvey, assigned to the CF-5 Program at Norair as Canadair's manufacturing representative for almost two years, is now Canadair's procurement representative in California. His work includes coordination of CF-5 procurement in California.

While he is obviously a logical choice to represent Canada in the Olympics, Mr. Harvey will go to Mexico only as a coach-consultant to the American cycling team. Wherein lies an unusual situation.

Mr. Harvey is a British subject who entered Canada as an immigrant. He cannot, due to Olympic rules, represent either. Nor can he represent the United States.

From his sweeping victory in Winnipeg, Mr. Harvey garnered one consolation, along with all the gold medals. He can represent Canada in the November World Cycling Championship to be held in Uraguay.

Since the first of the year, Mr. Harvey has continued to make his mark in cycling competition in Southern California. He won the 1968 California Grand Prix at Encino and finished second in the Far West Championship in which the victor set a new American track speed record. He has also won three other major events on local tracks.

CHAMPIONSHIP FORM which helped Barry Harvey (right) sweep all four gold medals presented in the Canadian National Championship bicycle races is displayed above.

WHAT DO YOU THINK?

What Questions Would You Like To See Answered in This Column

Mr. Sizemore

Wayne Sizemore, computer operator at Norair:

There is always the subject of the war in Vietnam which may be a little overworked. Another subject in the news is that new car dealers are now allowed to turn back the speedometers in the cars that they are selling. There is also a controversy over which is the more practical for state revenue, an increase in personal property tax or a sales tax.

Mr. McKnight

Arthur McKnight, designer at Norair:

Some more political questions since this is an election year and we are right in the midst of the elections. Things like what people think about the electoral college and the methods used to choose delegates to the conventions.

Mr. Mothershead

Ted Mothershead, master mechanic at Norair:

Questions like you have now. Current events are very good. These are the things that people live with every day. Questions on voting—this would be good. Different things on the campaign. Also, labor conditions, since people here are all interested in it.

Mrs. Semonian

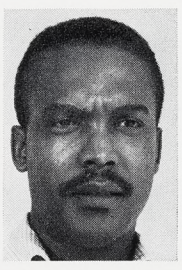
Vi Semonian, statistician at Norair:

What can be done about the smog is a good question. Also, ask them what they think about having a toll on the freeways, perhaps at the border, for visitors who are enjoying our freeways for free while we pay for them. They have toll turnpikes back east.

Mrs. Saxon

Jeanne Saxon, Materiel requirements clerk, Nortronics Hawthorne:

I thought perhaps we could ask our Nortronics people how they felt about the colorful, but distracting, billboards which line our streets and highways. On Interstate highways and freeways where speed and safety are major factors, maybe too many billboards compete for our attention.



Mr. Stockmon

Robert Stockmon, senior laboratory technician, Nortronics Hawthorne:

Do you think that car dealers should be allowed to disconnect the odometers on new cars before they are sold? That's the question I would like to see discussed by those of us who will be directly affected.

COOL SAM COMES IN FROM THE HEAT

Sam is a Malemute shepherd who came in from the heat.

SAM AND SUE

He chose a hot afternoon to take refuge in the cool corridors at Nortronics Hawthorne. He just walked in. Guards summoned Ben Hallmark, Plant Protection specialist, when they could find no reason for authorizing Sam's admittance, heat or no heat.

Mr. Hallmark made several attempts to lead Sam out of the building. But cool Sam beat him back each time and eased over to lie at the feet of Sue Beckmann, Security secretary.

Finally, Sam's owner was located through the tags he wore and his master was summoned.

Security personnel tagged Sam with a visitor's badge and "mugged" him. As he was led away, back into the heat of the day, Sam gave one last longing look backward. Which gave those involved reason to wonder if they have really seen Sam for the last time.

ADOPTED CHILDREN MAKE

Spencer Home a Small United Nations

Five orphaned children of mixed nationalities have a home because George and Sara Spencer care.

Mr. Spencer is a field service technical representative, with six years of Nortronics service. He is assigned to the Polaris program at Anaheim. The five children have been adopted over the past nine years by Mr. and Mrs. Spencer, beginning in 1959 when they were stationed with the U.S. Navy in Honolulu.

If you were to visit the Spencer home in Placentia, you would be greeted by Janice, a 10-year-old Japanese girl whom the Spencers adopted when she was just six months old. Another daughter, Susan Moo Nyu, is seven years old and Korean, adopted along with another Korean boy, four-year-old Jon Choon.

Jon's best friend is brother David, another four-year-old, who is Chinese, adopted while Mr. Spencer was assigned by Nortronics to the Newport News Shipbuilding Company in 1964. Danny, their six-year-old American son also was adopted at Newport News.

The most recent additions to the Spencer home were Susan and Jon who just became official family members barely a month ago. Mr. Spencer chose them from 400 children at the Holt Memorial Orphanage in Il San, Korea, last July 10. He then brought them to Guam for processing through the U.S. courts there.

"We aren't necessarily looking for more children to adopt," says Mr. Spencer, "but these past nine years have been the happiest of our lives, so I couldn't say for sure. I'd have to check with Sara on that."

The key to their future plans may be the word "necessarily," because the Spencers weren't "necessarily" looking for any more children after Janice and Danny. That was six years and three children ago.

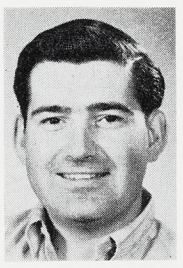
FIVE ADOPTED CHILDREN of Mr. and Mrs. George Spencer are, from left, David, 4; Susan Moo Nyu, 7; Janice, 10; Jon Choon, 4; and Danny, 6.

BETTER EDUCATION SOUGHT

Couple Aids in Birth Defects Fight

Michael is five years old. His appearance is that of the typical preschool youngster, but Michael is different.

He can't see. He can't hear. He has a severe heart disease and is mentally retarded.



Mr. Zagrobski

Michael — the name, of course, is fictional — is one of many thousands of youngsters in the United States who have multiple handicaps because their mothers contracted German measles early in their pregnancy.

Because these handicaps are often so limiting in nature, and because the number of children born with such handicaps has been increasing, several Southern California area parents last year formed a group to see what can be done.

They call themselves the Rubella Parents of California (Rubella is the Latin term for measles), and their main goal is to increase their children's chances for an education.

One of these parents is Joseph Zagrobski, an air conditioning mechanic at Northrop Ventura since March. Mr. Zagrobski and his wife, Cynthia, have two children. Brian, born three months ago, is perfectly healthy. Nancy, born three and one-half years ago, has sight and hearing defects.

"These children need help," Mr. Zagrobski believes, "and the parents can't do it all. We meet every month, and we circulate a newsletter, all aimed at helping parents provide a better education for their handicapped children."

The Rubella Parents were formed after a three-day meeting was held last year at the University of Southern California. Parents were told by officials of the John Tracy Clinic (essentially for hard-of-hearing children) that communication with the afflicted children is perhaps the most difficult block to overcome.

"It's been estimated," Mr. Zagrobski states, "that when a child is deaf, he loses 11 per cent of his ability to learn. It is also calculated that if a child is blind, he has lost 83 per cent of this ability.

"So, if a child is both deaf and blind, how do you reach him? That's what we want to know, and we need more teachers and more programs to help these children."

There are about 30 families who take an active part in the Rubella Parents. The mailing list for the group's newsletter—which Mr. Zagrobski edits — includes more than 400 parents and agencies throughout Southern California.

Their work is starting to bring results. Twenty Ventura County children will take part, starting this month, in a child development program, sponsored by the state and financed by federal funds.

One of these children is Nancy Zagrobski.

It is Mr. Zagrobski's belief that parental education must come first, if the children are to be helped.

"Parents who don't know what to do with a handicapped child are going to 'overcare' for that child," he said. "They'll pamper him too much, and he won't be able to function in the outside world. Independence must be taught. Some of these children are bright, but how do you reach the child who can neither see nor hear you?"

It is generally not known that German measles can cause such a great variety of birth defects. In addition to blindness, deafness and heart disease, many are afflicted with deficiencies in their bone structure, nerves, intestinal tract and growth functions.

Often, the mother-to-be is not even certain she has had measles. Cynthia Zagrobski was ill one evening in the second month of pregnancy. A doctor was called, but the symptoms had subsided by the time he arrived.

"Eventually," Mr. Zagrobski said, "they'll have a shot of some sort which will prevent all measles. But now there are thousands of children like Nancy. Somewhere I heard the figure 20,000, but it could be more than that. We want something for them. We want an equal chance for education.

"To a parent of a child with limitations, he or she is first of all a child; second a boy or girl; and third, a handicapped child. If we can inform the right people, maybe we can help to open new opportunities for these children. We just began this year, so we're making up for lost time."

Anyone seeking additional information about the Rubella Parents of California may contact Mr. Zagrobski at 805-485-3938, or Robert Stapleford, the group's president, at 213-325-5161.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Chevrolet, 1965 Super Sport, 327 eng., p/s, p/b, fact. air, AM-FM transist. radio, stereo tape, $2,200. 213-842-6958. A

Falcon Ranchero, 1965, V-8, 289 eng., r/h, auto. trans., $1,500. 213-322-0496. A

Volkswagen, 1966 1300, $1,350. 213-860-3450. A

Pontiac, 1958, stereo, hydraulics, front & back, $600. 213-596-8236. A

Lincoln, 1966 Continental, 4-dr., $3,595. 213-542-2378. A

Corvair, 1964 Spyder, $725. 213-644-2183. A

Station Wagon, 1947 Willys, completely reblt., extra parts & eng., $795. 213-837-9767. A

Chevrolet, 1961, 283 eng., p/s, p/b, r/h, $500. 213-327-2033. A

Oldsmobile, 1957 4-dr., r/h, hydro., $100. 213-429-5384. A

El Camino, 1960 Chev., 348 cu. ins., $700. 213-866-2033. A

Volkswagen, 1965, $1,150. 714-530-1237. A

Chevrolet, 1963, 4-dr., auto., V-8, $650. 213-320-3529. A

Chevrolet, 1958 convt., $100. 213-326-1409. A

Chrysler, 1960 300F, full power, factory equipped, solid lifters, $595. 213-370-4315. A

Chevrolet, 1955 2-dr., 3-spd., $150. 714-521-0416. A

Chevelle, 1964 Malibu S.S., auto., V-8, $1,200. 213-378-7651. A

Ford, 1953 2-dr., V-8 eng., $65. 213-370-2100. A

Ambassador, 1966 Dpl. Tudor h/top, p/s, p/b, r/h, $2,150. 213-542-3271. A

Volkswagen, 1960, $750. 213-326-6942. A

Chevrolet, 1955 6-cyl. stick, $150. 213-676-6893. A

Dodge, 1955 Chrysler Hemi-head eng., $125. 213-675-2735. A

Mercedes Benz, 1956 190SL, $825. 213-373-1395. A

Falcon, 1962, 4-dr., r/h, stick shift, $350. 213-676-7763. A

Volvo, 1958, trans. & clutch o/hauled, $350. 714-525-2516. A

Ford, 1964 Galaxie 500, 4-dr., p/s, $1,050. 213-644-1531. A

Chevrolet, 1957 Bel Air, 2-dr., auto. trans., $375. Box 1801. A

MGB, 1963, $1,350. 213-833-9696. A

Volkswagen, 1964, w/1963 Porsche 1600S eng., many extras, $1,800. 213-534-1974. A

Chevrolet, 1960, 4-dr., auto., r/h, $400. 213-363-5673. A

Valiant, 1964, 4-dr., V-8, 4-spd., r/h, $950. 213-921-3394. A

Mercury, 1962 Monterey, 390 eng., r/h, p/s, p/b, a/c, auto., $600. 213-672-7359. A

Corvair, 1963, 3-spd. stick, Astros, r/h, $450. 213-645-7715. A

Dart, 1964 GT, 4-spd., radio, $850. 213-372-5367. A

TR-3, 1960, new seat, top, clutch, $900. 213-377-8002. A

Thunderbird, 1955, porthole top, $895. 213-656-4097. A

Mustang, 1967 GT, 390, 4-spd., a/c, discs, extras, $2,795. 213-323-4257. A

Austin Healey, 1960 Sprite, new top, tires, $375. 213-641-1259. A

Peugeot, 1959, new brakes, tires, $200. 213-326-6195. A

Chevelle, 1966, 427, 4-spd., extras, $2,000. 213-329-5422. A

Volkswagen, 1967 squareback, $1,950. 213-596-9748. A

Volkswagen, 1960, mag rear whls., $500. 213-834-4184. A

Buick, 1963 Riviera, full power, a/c, stereo tape, $1,300. 213-370-9170, 213-672-1868. A

Cadillac, 1961 2-dr., a/c, full power, $995. 213-377-3563. A

Ford, 1961 4-dr., 6 cyl., $150. 213-933-0989.

Ford, 1959 Galaxie, 332 eng., $250. 213-675-8278. A

Chevelle, 1966 SS 396, 4-spd., $2,050. 213-671-9306. A

Oldsmobile, 1967 Cutlass Supreme, 4-dr. h/top, p/s, p/b, a/c, r/h, auto. trans., $2,500. 213-327-0883. A

Pickup Truck, 1967 GMC, ¾-ton, V-6, Hydra., extras, $2,100. 213-378-4959. A

Ford, 1952, auto. trans., $100. 213-377-4146.

Household Items For Sale

Desk, exec., walnut, w/attached typewriter stand, $25. 213-537-3098. B

Bed-Divan, dble., $50. 213-321-6237. B

Drapes, gold color, $35. 213-679-6256. B

Dining Room Set, mahogany, Duncan Phyfe, w/pads & 4 uphol. chairs, $50. 213-377-5322. B

Household Items For Sale

Range, Wedgewood, gas, copper, 6 mos. old, $100. 213-943-3108. B

Stove, Wedgewood, 42″, $50. 213-639-5861. B

Hutch, birch, $150. 213-865-0301. B

Range, gas, & refrigerator, apt-size, $5 ea. or $7.50. 213-370-5287. B

Chairs, pr., green print, $25. 213-776-1928. B

Piano, upright, refinished antique Canterbury red, Kimball, $400. 213-662-0429. B

Silver Service, 10-pc., by Derby International, $95. 213-378-2564. B

Refrigerator, 2-dr. coppertone Frigidaire, lge. freezer on top, $50. 213-325-6022, 213-325-2613. B

Toaster, Sunbeam, radiant control, $10. 213-430-7388. B

Washer & Dryer, G.E. deluxe comb., elec., used 6 mos., $100. 714-772-0713. B

Washer, G.E., auto., $15. 213-644-2607. B

Stove, 4-burner, $20. 213-755-7166. B

Clothes Hamper, baby's, white wicker, $4. 213-835-3869. B

Table, chrome, formica top, 29½″ high, 18″ x 24″, 2 drop leaves, $10. 213-676-2661. B

Hide-A-Bed, Simmons, dble. size, brown w/ blue slip cover, $20. 213-324-2992. B

Refrigerator, 1964 Frigidaire, white, $95. 213-674-9627. B

Dining Room Set, 5-pc., maple, drop leaf table, 4 Windsor chairs, $165. 213-675-3957. B

Dishwasher, G.E., portable, white, 1 yr. old, $100. 213-645-5786. B

Miscellaneous For Sale

Hair Dryer, upright, professional style, $10. 213-423-4837. C

Pups, toy poodle, female, 6 wks. old, $35. 714-528-9227. C

Encyclopedias, Colliers, 10 vols., $50. 213-430-2619. C

Television, maple cabinet, Motorola, 24″ screen, $5. 714-879-7625. C

Camera, Yashica 44LM reflex, f/3.5 lens, aux. wide angle & telephoto lens, extras, case, $45. 213-532-7846. C

Motorcycle, 250 Star BSA, $395. 213-675-5695. C

Pre-amplifier, Heath Kit, model WA-P2 & power amp. model W-5M, $10. 213-372-7875. C

Bicycle, girl's 24″, $10. 213-532-7717. C

House, 4-bdrm., 2 baths, $27,000. 213-320-6975. C

Fall, 15″, human hair, med. brown, $50. 213-675-0860. C

Swimming Pool, portable, 3′ deep x 15′ dia., w/ladder, $75. 213-671-0560. C

Receiver, Hallicrafters S40, service manual, $45. 213-335-3229. C

Horse, 8 yr. old gelding, experienced rider only, ½ Arabian & ½ quarter, $400; w/tack $550. 213-834-7535. C

Gown, sleeveless, empire-style, mint green crepe, size 7 j.p., $10. 213-755-7255. C

Cabin Cruiser, 27′ Tollycraft, twin engs., all extras, $6,500. 805-482-6740. C

Paint Spray Unit, ⅓ h.p. elec. motor, compressor, hose & gun, $35. 213-677-7421. C

Motorcycle, 500 cc Indian, $350. 213-677-7758. C

Motorcycle, 1967 Honda 305 Scrambler, $500. 213-399-5804. C

Mini-Bike, Taco 44, 3 h.p. eng., $95. 213-291-0025. C

Saxophone, Selmer Bundy E flat alto, $225. 213-377-5853. C

Plants & Trees, assorted, in tubs, also flower pots, $2-$15. 213-676-3651. C

Bicycle, 24″, girl's, $15. 213-670-6084. C

Camper, for 1964 Chev. ½-ton pickup, $150. 213-379-2554. C

Utility Trailer, 7′ x 4½′ x 5′, spare tire, shocks, $175. 213-635-4378. C

Wig, brown, machine tied, 100% human hair, $30. 213-676-9136. C

Power Mower, 3 yrs. old, Sears 20″ rotary, $15. 213-377-4604. C

Slip Lot, Salton Sea, roads & util. in, near yacht club, $7,100. 714-535-1694. C

Ski Boat, 16′ in/bd., trailer, C.G. equipped, glassed mahogany hull, $550. 213-545-5995. C

Radio-Record Player, AM-FM, Packard Bell, maple, $30. 213-692-6336. C

Shopsmith, combination, table saw, drill press, disc sander & planer, ¾ h.p. motor, $150. 213-377-3487. C

Stereo Components, Fisher 75W receiver w/ cabinet, Garrard AT-60 changer w/base, Knight 3-way shelf, spkrs., $200. 805-498-2572. C

Preamp-Tuner unit, Harmon Kardon solid state, 2 yrs. old, $150. 213-545-3128. C

House, 2-bdrm., cpts., $17,500. 213-671-8864. C

Home, walking distance to schools, 3-bdrm., 2 baths, $59,000. 213-377-2670. C

Pups, weimaraner, born July 10, no papers, $25. 213-757-7824. C

Surfboard, Surfside, 9′ 6″, $80. 213-596-7600. C

Dog, German short-haired pointer, male, 10 mos. old, A.K.C., $100. 213-431-7696. C

Acreage, 5 acres in Antelope Valley, $45 dn., $45 mo., $4,500. 213-378-1026. C

Stove, 3-burner, butane, for trailer or camper, $50. 213-372-4404. C

Honda, 1965 Super Hawk, extras, $350. 213-370-0250. C

Typewriter, IBM elec., $100. 213-327-1215. C

Miscellaneous For Sale

Luggage Rack, lge. custom built, $25. 714-827-6813. C

House, 3-bdrm., 2 baths, elec. bltins, cpts., dps., 3 yrs. old, will FHA, Hesperia Country Club membership avail., $18,500. 714-244-9283. C

House, 2,000 sq. ft., 5-bdrm., 2-story, 2 f/places, cpts., dps., f.a. heat, bltins, dble. car gar. w/laundry rm., b/wall fence, 12x22 covered patio, Garden Grove, G.I. at 5¼%, $35,500. 213-644-6270. C

Boat, 13½′ runabout, 44 h.p. Mercury outbd., trailer, many extras, $750. 213-476-1649. C

Shoe Skates, white, size 8, $5. 213-345-3195. C

Ski Boat, 14′, trailer, 35 h.p. Evinrude w/ elec. starter, $550. 213-675-6482. C

Twin Motorcycle, 1966, 350 cc, model 361 Jawa, many extras, $275. 213-756-4837. C

Spinning Reel, J. C. Higgins, model 535-42110, holds 450 yds., 12 lb. line, $18. 213-375-6467. C

Boat, 16′, fiberglass shell, trailer, 1961 22 h.p. Scott-Atwater outbd. motor, all access., $300. 213-329-9464, 213-324-9796. C

Honda, 1965 250 Scrambler, $300. 213-944-1202. C

Gun Cabinet, for 7 guns, $30. 213-378-3055. C

TV, 14″ portable, UHF converter & floor stand, $12.50. 213-672-5649. C

Surfboard, 9′ 3″, 3 stringers, orange & red tint, $80. 213-370-1749. C

Honda, 1964, 160 cc, $250. 213-532-7017. C

Camping Trailer, Shasta, sleeps 4, butane stove, $630. 213-675-1776. C

Boat, 14′, 45 h.p. Mercury motor, trailer & skis, $450. 213-532-6497. C

Turntable, Rek-O-Kut L-34 w/S-160 tone arm & new AE 108 stereo cartridge, $45. 213-374-6056. C

Transmission, for 1952-'53 Chev., reblt. Powerglide, $25. 213-676-4489. C

Uniform & Tights, size 12, Hawthorne Jr. majorette, green corduroy & boots, white, size 6½, $10. 213-323-2883. C

Dog, springer spaniel, champ. sire & background, 7½ yrs. old, $50. 213-831-6567. C

Motorcycle, 1965 Harley Davidson, FLH 74 electra glide, $1,395. 213-323-6366. C

Surfboard, 9′ 7″, Roberts, $55. 213-675-6081. C

Cemetery Lots, Terrace of Faith, Rose Hills, $200 ea. 213-867-0662. C

Movie Camera, 8 mm Yashica, 3-lens turret incl. 6.5 mm wide angle, 10 mm normal & 25 mm telephoto, $30. 213-324-5135. C

Camping Equipment, lge. Cronco cooler, Igloo water cooler, 3 gal., & metal table, 24″ x 60″, $33. 213-384-4017. C

Motorcycle, BSA 650 cc Lightning Rocket, 1966, many extras, $850. 714-637-3195. C

Luggage, Skyway, charcoal, size 26″ x 20″ x 8½″, $20. 213-324-6702. C

Home, 5-bdrm., 2 baths, 3-car gar., patio, sprinklers, dps., a/c, near Northrop Ventura, $38,000. 213-889-8075. C

Golf Bag, black, 2 yrs. old, $7. 213-679-5731. C

Fishing Rod, spin-cast, 5-pc., quick taper, w/padded leather case, $12. 213-326-5731. C

Rifle, Winchester M-70 30-06 w/scope, $150. 213-672-8518. C

House, 4-bdrm., fam. rm., 2 baths, near Northrop Ventura, cpts., dps., f.a. heat, f/ place, covered patio, b/wall, landscaped, $24,950. 805-498-3508. C

Triplex, cpts., dps., bltins, lge. owner's unit, open beams, f/place, $45,000. 714-776-2845.

Chalet, 2-bdrm., cpts., dps., stone f/place, bltins, 2 baths, Running Springs vicinity, $23,250. 805-644-3481. C

House, 5-bdrm., 2½ baths, cpts., dps., 20 min. from Nortronics Anaheim, FHA appraisal $27,400, FHA loan avail., $27,000. 714-531-5987. C

Trailer, 16′, 1961 Dalton, butane refrig., stove, electrical hookups, $675. 213-679-8525. C

Trailer, 15′, 1955 Shasta, sleeps 6, elec. brakes, oven & range, ice box, $695. 714-892-4358. C

TV, b&w, 18″ screen, UHF/VHF, $45. 213-676-6661. C

House, 3-bdrm., lge. det. gar., encl. summerhouse, N. Inglewood, 2nd t.d., $18,500. 213-677-6204. C

House, 2-bdrm., completely redecorated, near shopping & schools, 10% dn., consider lease, $24,950. 213-474-0110. C

Trailer, 14′, sleeps 4, Little Dipper, $700. 213-834-8081. C

House, 3-bdrm., patio, bltins, dps., near P.V. schools, 2-car gar., $26,500. Box 1802. C

Piano Accordion, pro. 120 bass Concerto, case, $200. 213-675-7719. C

Tires, 2 Royal Tiger Paw, wide, recaps, 7:00-13:00 ¾ tread, $10 ea. 213-644-6464. C

Land Camera, Polaroid, auto., model 220, elec. eye exposure, b&w or color, carrying case, $75. Box 1803. C

Motorcycle, 1962 Zundapp 250 dirt bike, $150. 714-539-2098. C

Depth Mike, 0-3, Starrett, case, $10. 213-326-5299. C

Engine & trans., for 1961 Falcon, needs rings, auto. trans., $50. Box 1804. C

Home Unit, Muntz, complete, AR 300, $225. 213-780-8921. C

Gown, size 12, peacock blue, floor length, sleeveless empire style w/matching evening coat, $15. Box 1805. C

Miscellaneous For Sale

Accordion, Italian made, 120 bass, 7 keyboard shifts, 2 bass shifts, $150. 213-326-1856. C

Pups, Australian silky terriers, male, 5 wks. old, AKC reg., $150. 805-482-1756. C

Home, 3-bdrm., 1¾ baths, f/place, new cpts., block wall, sprinklers, 2-car gar., screened-in patio, 5 min. to Norair, $27,900. 213-327-8289. C

Wig, dk. auburn, European hair, $75. 213-674-2736. C

Pistol, P-38 German tankers', w/ammo, holster & shoulder strap, $85. 213-377-8898. C

Bicycle, girl's 26″ Monarch, $25. 213-758-9182. C

Whirlpool Bath, Turbojet, late model, $100. 213-328-0887. C

Oil Painting, 24x36, blue & white theme in blue & gold frame, $35. 213-371-9925. C

Hi-Fi, Magnavox, $75, other items, various prices. 213-329-7182. C

Boat Mold, female, incl. top deck, $300. 213-679-7840. C

Motorcycle, 1960 Triumph, 650 cc, new tires, $500. 213-678-8032. C

Acreage, 2½ acres in Lancaster, $1,300 dn., $50 mo., 6% interest, $4,990. 213-375-7130. C

Sail, Spars, & complete rigging, approx. 90 sq. ft. of dacron sail, alum. spars & s.s. fittings, $150. 213-831-9545. C

Speaker Cabinet, bass reflex 22″x21″x16″, $12.50. 213-675-0788. C

House, 3-bdrm., fam. rm., 1¾ baths, fenced yd., det. gar., bltins., 10% dn., $28,500. 213-323-4116. C

Wanted to Buy

Catamaran, up to 18′, reasonable. 714-497-1422. D

Easel, artist's studio type. 714-772-1975. D

Typewriter, recent vintage. 213-390-2958. D

Filter Unit for 18′ Doughboy pool, reasonable. 714-635-3315. D

Dishwasher, portable. 213-326-2590. D

Weightlifting Equipment, barbells, dumb bells, weight-plates, in any combination or condition. 213-434-1427, 213-423-1510. D

Corvair Monza, 1965, 2-dr., auto. Box 1806. D

For Trade

Sweep Generator, Eico, & marker for FM & TV, in kit form, trade for C.B. equipment. 213-434-8205. E

Green Stamp Books, 4, trade for 4 Blue Stamp books. 213-671-8401. E

Free (To Be Given Away)

Auto Parts for 1934 Chev. 5-window cpe. 213-429-1114. F

Windows, steel casement, approx. 2′ x 4′, 2 ea. 3′ x 6′, swing out sect. 213-328-1520. F

Pups, half thoroughbred Sheltie toy collie, 8 wks. old. 213-378-1486. F

Rentals Offered

Townhouse, 4-bdrm., 2½ baths, 2-story, cpts., bltins, screened lanai, pool, children & pets o.k., lease or lease w/option to buy, $250 mo. 714-635-1686. G

Cabin, Lake Arrowhead Woods Est., sleeps 8, $25 day; $150 wk. 213-472-6438. G

House, 4-bdrm., 2 baths, stove & refrig., 2-car gar., children & pets O.K., $165. 714-847-8140, 213-860-5288. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

House, 3-bdrm., fam. rm., 1½ baths, dble. gar., fenced yd., cpts., dps., f/place, within walking dist. of Norair, avail. Sept. 20, $200 mo. 213-676-6390. G

Apt, 2-bdrm., unfurn., singles, preferably bachelors, close to beach, $160 mo. 213-372-1410. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

La Brea & Centinela vicinity, Inglewood. Jerry St. John, Norair ext. 2632, 213-672-4749.

7:30 a.m. — 4:15 p.m.

From Santa Monica area. P. D. Mihailidis, Mariposa ext. 4025, 213-399-6945.

Midnight — 7 a.m.

From Santa Monica area. V. A. Kostantinidis, Norair ext. 2200, 213-399-6945.

Rides Offered

Midnight — 7 a.m.

From Santa Monica area. V. A. Kostantinidis, Norair ext. 2200, 213-399-6945.

8 a.m. — 4:45 p.m.

Orange County Airport to Hawthorne. Sheldon O. Bresin, Norair ext. 4863, 714-532-1510.

Rentals Offered

Apt, 2-bdrm., over gar., no pets or children, gar. not incl., $95. 213-328-2932. G

Rentals Wanted

House or duplex, 1 or 2-bdrm., fenced rear yd., must allow pets. 213-864-7560. H

House, 2-bdrm. & den, Hawthorne area. 213-675-2590. H

Child Care

Child Care wanted, mature woman to care for 3 children, 1 pre-school age, at our home, 5 days wk., 8 a.m.-4 p.m., $40 wk., must have own car. 213-293-5993. I

Babysitting offered, fenced yd., 10 min. from Norair. 213-542-2795. I

Personals

Baseball Pitchers wanted between 18-24 yrs. old for semi-pro league, for tryouts. 213-834-1592. L

Rent or buy concrete mixer. 213-375-3756. L

Ironing in my home, $1 hr. 213-379-2156. L

Teacher at Hawthorne High School needs ride to & from work, either 7:30 a.m. or 8 a.m. shift, from Palos Verdes Ests. 375-5545.

Ironing, in my home, by piece. 371-3079. L

For Sale or Trade

TV, Radio-Phono. Comb., $30 or trade for used clothes dryer, gas or elec. 213-644-1952. M

T-Bird, 1960, w/sunroof, $300 or trade for motorcycle of equal value, prefer dirt bike. 213-679-8035. M

Ford, 1965 Galaxie 500, r/h, p/s, $1,650 or will take a trade & balance in cash. 213-833-2626. M

Mustang, 1966 2+2, 4-spd., V-8, $1,800 or trade for Volkswagen, 1968 or '67 fastback. 213-377-7670. M

Tempest 4, 1963, $500 or trade for sports car of equal value. 213-696-9438. M

Gun Club Slates September Matches

Gun Club members will meet next week to compete in both 22-caliber rimfire and center fire matches.

Competition begins at 7 p.m. September 19 at the Los Angeles Gun Club, 1513 Beryl Street, Redondo Beach. Practice begins at 6:30, club officials said.

Additional information may be obtained by contacting Commissioner Mark Burnett on ext. 1597.

PERFORMANCE AWARD — Andrew J. Shoemaker (right), Defense Contract Audit Agency auditor assigned to Northrop Norair, receives an award for having demonstrated excellence in his work for the past fiscal year. Presenting the award is Harold D. Parsons, Defense Contract Audit Agency resident auditor for Northrop Corporation.

Golfing Legions Are Busy With Tournaments, Leagues

Nortronics golfers were busy in August as two monthly tournaments were played. The men's twilight league winners at Anaheim were decided and plans were made for September tournament action at both Hawthorne and Anaheim.

Twenty-eight Anaheim twilight golfers on 14 teams wrapped up play at the nine-hole Alta Vista Country Club in Placentia. In the first twilight win for either, George Baldwin, senior designer, and Paul Neidhardt, Payroll supervisor, grabbed the lead in the seventh week of play and were never behind from that point, setting a record in total points scored. Vito De Paul and Whitey Hampton teamed to win second place and Keith Davis and Bob Benedict were third.

In the regular monthly Anaheim tournament, played over the 18-hole Fallbrook Country Club course, Ed Hofmayer copped first place in the first flight by netting a 66. Joe Bush was second with a 68, and John Rettberg a stroke behind with a 69. Norio Mitsuora and Otto Dorner shared first place honors in the second flight with rounds of 72. Walt Burgess finished with a 75.

Entries for next month's Anaheim golf competition at Lake San Marcos Country Club close one week from today.

Meanwhile, in Hawthorne monthly play at El Rancho Verde Country Club, Dick Wood walked off with honors in flight one for his net 70. Dave Krieghoff and Bill Phillips finished the flight knotted at 72. Jim Mounts' 72 was the best second flight round with Lowell Olsen and Ray Flynn coming in with a 73 and 74, respectively. The third flight was won by George Murphy who fired a 72, winning handily over Joe Kubas (76) and Len Kaufman and Bill Morlan who tied at 77. The best game net went to Cliff Getz for his 68.

Mr. Krieghoff, NRC golf commissioner at Hawthorne, has arranged a golfing special for the September tournament.

Service Awards To Be Presented To 21 Employees

Twenty-one service awards will be presented to Nortronics employees this month.

Richard Lindsey will receive recognition for 20 years with Northrop. Mr. Lindsey came to the company in 1948 as a research analyst assigned to the SNARK flight control system. He is now Nortronics' C-5 deputy program director.

Ten will receive 15-year awards in Hawthorne. They are Richard Golding, Garth Haueser, Thomas Jackson, Richard Keppel, Delbert McArtor, Karl McCready, Joseph Squires, Paul Sullivan, Lillie Turner and Otto Wolter.

In Anaheim, 15-year pins go to Rosemary Bailey, Benny Camacho, Thomas Kew, Tom Maxwell, Arnie Moore and Robert Wise.

Four will be recognized at Palos Verdes for 15 years of service. They are Milton Bustamente, David Conklin, Patrick McCleary and John Welsh.

TWO LEAGUES

Softball Season Ends

Hawthorne's 12-inch slo-pitch softball season, with 90 players participating on seven teams, closed out recently with the first round winners, the Rogues, managed by Lou Colombano, defeating the second round winners, the Johnson Jets, managed by Joe Rey, in an 18-12 championship slugfest.

In the first round double-header playoff, the Jets defeated Norair's Regals, managed by Al Larsen, 12-7, in the first game. In the second game, the Rogues edged the Jets 9-7, giving the Rogues the first round championship. The Jets entered the playoffs with a 5-1 record.

The 16-inch slo-pitch league, comprising 50 players on four teams, ended earlier with the Supporters from Nortronics Hawthorne, managed by Roger Horn, emerging as champions by winning both the first and second rounds with an over-all record of 11 wins and one loss. They will now play the champions from Nortronics Anaheim to decide the Nortronics-wide 16-inch slo-pitch championship.

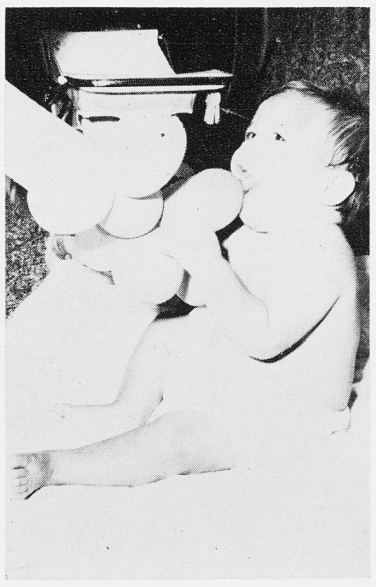
LANGLEY CENTER KEG TEAM TRIUMPHS

An NRC bowling team, comprised of Northrop Nortronics personnel on duty at NASA's Langley Research Center, Virginia, has placed second in its league, while individual members copped several honors.

Jim Hicklin, elected vice president of the league for the coming season, walked away with high average honors. He carried a 184 average. John Paseur took high individual series with a 724.

Members were Mr. Hicklin, Mr. Paseur, Claude Aven, Jack Nunley, Arne Swanson, Sonny Smith and Jim Arnold.

In addition to second-place team honors, the Northrop keglers took high team series laurels.



FAMILY PICNIC DRAWS 1,000

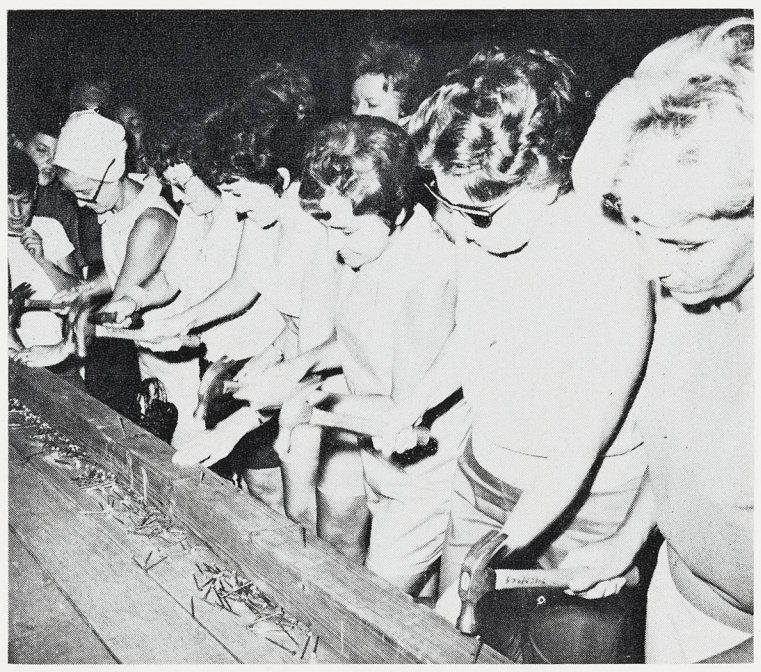
Nearly 1,000 Nortronics employees, families and friends ate 742 hot dogs, gulped 5,596 beverages, munched through 1,999 bags of popcorn and topped it all off with 1,206 ice cream desserts. And that's not counting the picnic lunches.

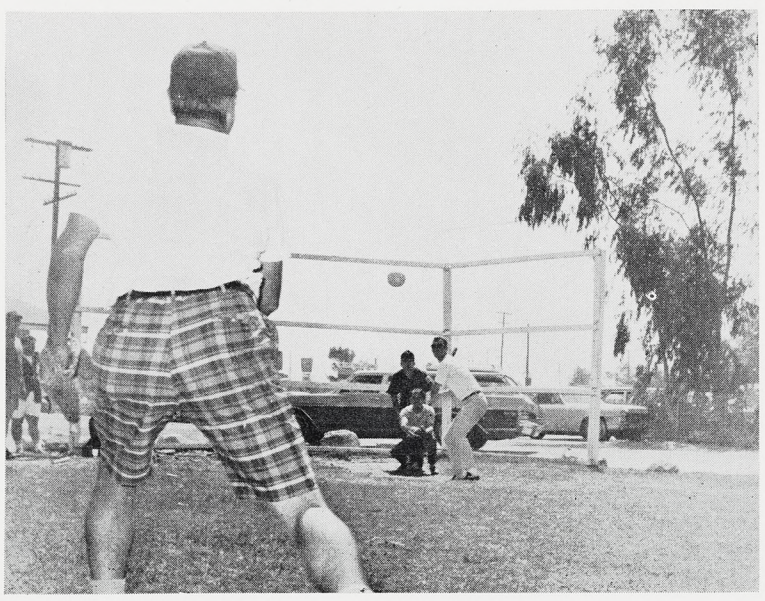
It all happened among the green grass and shady trees of Swiss Park in Duarte at the annual Nortronics-wide Old Fashioned Family Picnic.

The day was full of sack races, egg tossing, pony rides and a puppet show, and a special feature for the ladies only was a nail driving contest. In addition, employees brought home a long list of door prizes and other gifts won for guessing games and competition. There were clowns with free balloons, kiddie rides, softball for the men and boys, a magic show and music for dancing.

Near the 5 p.m. closing time activities were still in full swing. The concensus was that it ended too soon. For those who wanted more, there'll be another Nortronics picnic next year.

PHOTOS BY JOHNNY VALESKI





NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California Vol. 26, No. 19 September 25, 1968

SEALAB III Ready For Next Role

The Nortronics-developed SEALAB III command and medical vans, interfaced with the SEALAB III habitat, have just completed shallow water testing at the San Francisco Naval Shipyards.

The tests, and similar ones to come, are preparatory to sending teams of aquanauts to depths of 600 feet and lower for periods of up to two weeks. The experiment is one phase — the most ambitious yet — of the U.S. Navy's "Man-in-the-Sea" program in the Deep Submergence Systems Project (DSSP).

The actual dive of the lab, with an eight-man aquanaut team aboard, is scheduled for October 18 in the sheltered Wilson Cove area just off the northeast tip of San Clemente Island. At that time the capsule will be submerged approximately 620 feet to the sandy rock bottom of the continental shelf.

Scientists and engineers, including Jim McCarthy, senior biomedical engineer, Warren Schreyer, assistant test director, and Dr. Raymond Hock of the Northrop Research Laboratories, will assist in surface ship-board experiments based on physiological and biomedical information supplied directly from the men in the cap-

(See SEALAB, page 6)

AN OMEGA PROGRAM review was conducted last week at the Navigation department in Hawthorne by Irv Lublin (left), Naval Air Systems Command OMEGA project manager. Bob Sanders, Nortronics' airborne OMEGA program manager, shows Mr. Lublin some of the hardware modules that will be included in the first airborne OMEGA receiver-computer.

Marconi, Ltd. to Distribute OMEGA in United Kingdom

Commercial OMEGA ship-board navigation systems produced by Nortronics' Navigation department will be distributed and serviced by Marconi International Marine Company, Ltd., a British firm, under an agreement reached earlier this month.

"This means that Nortronics' involvement with OMEGA takes on a new dimension of significance," commented Dennis Bates, Nortronics applications engineer.

"The agreement," said Mr. Bates, "permits Marconi to sell OMEGA I and to service equipment on an exclusive basis in the United Kingdom and Ireland."

According to Bob Sanders, Nortronics' airborne OMEGA program manager, Nortronics is presently in the first phase of a two-stage airborne OMEGA development. Breadboarding has been completed and the first hardware is to be delivered to the U.S. Navy early next year. When the airborne development is com-

(See OMEGA, page 6)

Largest OV2 Spacecraft Set for Launch into Orbit

The OV2-5 spacecraft, the largest of three OV2 spacecraft designed and built by Northrop, is scheduled for launch into synchronous orbit tomorrow by a U.S. Air Force Titan IIIC booster from Cape Kennedy, Florida.

The vehicle, designed to study the phenomena of the sun which affect communications, weather and atmospheric conditions on earth, was developed by the Satellite Systems organization of Northrop Systems Laboratories.

The OV2-5 is the largest and most sophisticated scientific spacecraft ever scheduled to be put into synchronous orbit, according to Donald F. Adamski, OV2 program manager. It weighs 475 pounds and carries 17 sensors capable of collecting data concerning particle, geomagnetic and solar radiation. In folded launch configuration, it is a cube-shaped package approximately three-and-a-half feet on each side.

In orbit, it will unfold like a "jack-in-the-box" into a spider configuration with a total of 19 booms and antennas extending from the body. The deployed OV2-5 has an over-all span of 52 feet.

The spacecraft's initial position will be directly over the Equator at an altitude of 22,237 miles and south of central United States. It will be monitored initially by a large antenna at Vandenberg Air Force Base, California, and will later be monitored by approximately 30 receiving stations throughout the world as it drifts eastward at approximately three degrees per day.

The OV2-5 is the culmination of a rigorous development and test program pursued by Systems Laboratory personnel. Key program contributions are attributed to Nortronics Satellite Systems, Development Engineering, Quality Control and Manufacturing organizations at Hawthorne and Palos Verdes.

The program started with the early breadboard fabrication and component test phase, and concluded with extensive checkout and the launch.

Education Plan Recipients Must Notify Office

Nortronics employees who have registered for fall college courses, and plan to take advantage of Northrop's Educational Refund Plan, must notify the Nortronics Personnel Training office at Anaheim, ext. 1001, within 10 days after the start of classes.

Dave Chalk, acting administrator of Personnel Management and Training, made the announcement. He emphasized that the purpose of the plan is to provide reimbursement to employees who complete suitable courses of study. "Suitable" refers to courses which are "job related and will lead to improved performance in a current assignment or qualify an employee for a subsequent assignment that is logically related to his present employment." Employees are encouraged to take advantage of the educational opportunities available and to contact Personnel Training for answers to questions regarding the approvability of planned courses of study.

Northrop's liberal Education Refund Plan makes it possible for students accepted in the program to receive reimbursements of up to 100 per cent of the total cost for courses, including texts and other required course items.

Political Parties, Candidates Seek Help As Election Nears

HELP WANTED. Men and women. Age not a requirement, work with public. Hours open. Must like to work with people and have an interest in the future of America. No pay, but great satisfaction derived from working for your beliefs.

Although the above want ad may not appear in your daily newspaper, the time has come when the leaders of American political parties seek all the help they can get in the final push to the November elections.

Whether or not you have ever taken an active part in political action, your party and your favorite candidates need help of two specific kinds: (1) financial and (2) labor to help get out the vote.

Most of us may feel that the limited time and money we have to give would make little difference in the outcome of any election, yet the opposite is true. A few dollars might finance the bumper stickers or radio time that would make the difference between victory and defeat for a candidate. A few hours on the telephone might convince a dozen or more of your acquaintances that your candidate is the right man for the job.

As one of a number of major corporations participating in California's Good Citizenship Program for 1968, Northrop is urging all personnel to become involved, not only by voting in the November 5 election, but by donating time and money in support of the parties and their candidates.

Listed below for your convenience are locations to which checks may be mailed, or where you may volunteer help. In the case of the two major political parties, addresses listed are those of the County Central Committees. In the case of the American Independent Party, the national office is listed.

Republican

Los Angeles County — 315 West Ninth Street, Los Angeles; Orange County — P. O. Box 1962, Santa Ana; Ventura County—536 East Meta Street, Ventura.

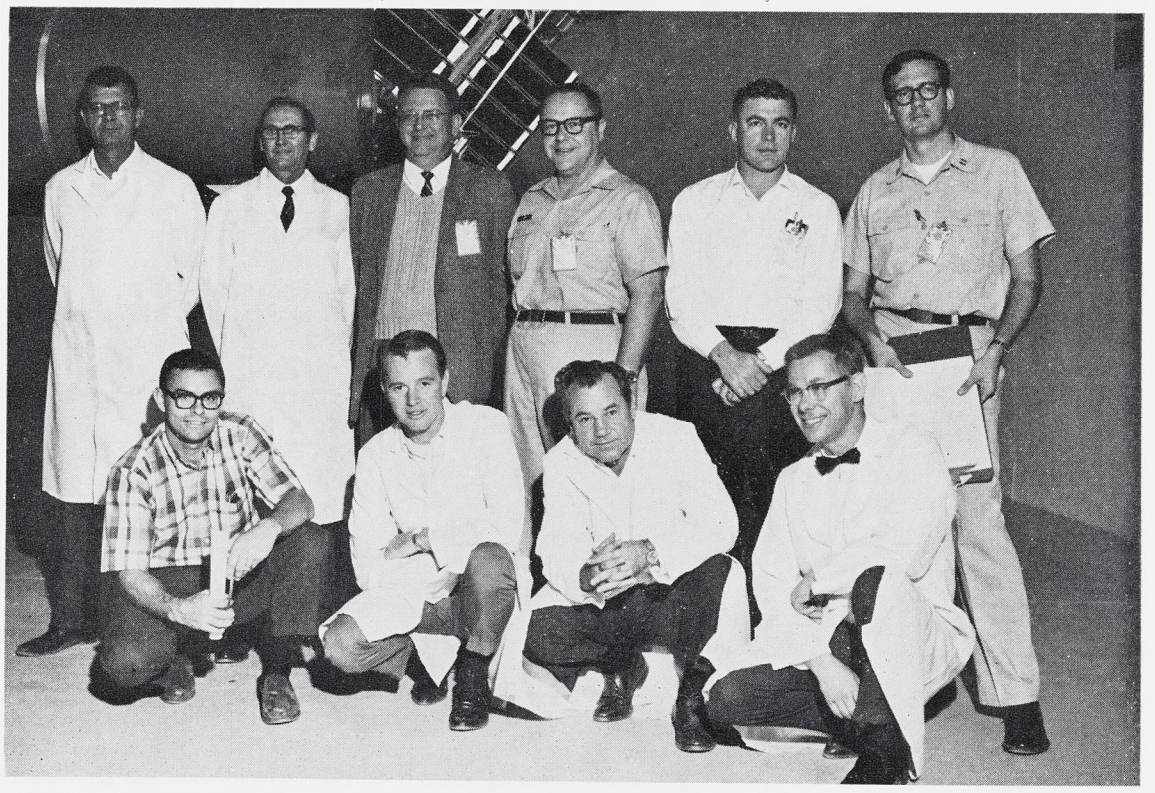
Democratic

Los Angeles County — 3621 Third Avenue, Los Angeles; Orange County — 13611 Arizona Street, Westminster; Ventura County—134 Davis Street, Santa Paula.

Independent

Wallace Campaign, P. O. Box 1968, Montgomery, Alabama 36103.

For anyone preferring to make contact with other precinct or local candidates' headquarters, the local information telephone operator may be able to provide a telephone number.



OV2-5 CENTRIFUGE test team members are front row, (from left) Don Adamski, Jerry Jack, Del Shanks and Joe Peterson. Standing, (from left) are Al Edwards, Walt Gray, Jim Brown, Lt. Colonel F. S. Jasen, Roland Hokinson and Captain A. Meyers. Absent when the photograph was taken was Herman "Bunky" Ayres. The spacecraft is mounted in the background.

NORTHROP NEWSMAKERS

Wayne Stevens, Norair, has received an "Outstanding Service to Scouting" award from the Culver-Palms Cub Scout Pack 49 at the group's annual Blue and Gold Banquet.

Mr. Stevens put together an interesting presentation covering Norair's work on F5/T-38 and 747 Programs for the youngsters. **Floyd Parker,** Norair, is assistant cubmaster for Pack 49.

* * *

Air Force Airman Brian E. Swartz, the son of **Harry Swartz,** Norair, and **Mrs. Swartz,** has attained Honor Student status in the Electronic Principles Department of the Air Training Command's 3380 Technical School, Keesler AFB, Mississippi.

Colonel Norman A. Kriehn, USAF, chief of the department, notified Mr. Swartz that his son's standing is achieved by less than one per cent of all students in attendance at the school.

* * *

Walter H. Gapik, Nortronics, has been installed as grand knight of the Knights of Columbus, Pomona Council 877. Mr. Gapik was deputy grand knight last year and for three years was president of the Kaycee Club.

* * *

Eleven-year old **Donald Bordelon,** grandson of **John Pawlicki,** Norair, recently beached a 4-pound, 12-ounce corbina at Torrance Beach. Young Don dis-

played some of the talents taught him by his grandfather, NRC commissioner of the Northrop Surf Fishing Club for the past 13 years.

* * *

Charles W. Eyres, Norair, will act as vice chairman of the 1968 National Aeronautic and Space Engineering and Manufacturing meeting in Los Angeles, October 7 through 11.

The Society of Automotive Engineers will sponsor the symposium at the Statler Hilton hotel.

Also at the conference, major problems facing air terminal users will be the subject of a presentation by **Winfield H. Arata, jr.,** Northrop specialist in air logistics. Mr. Arata's paper on "Overall Air Terminal Logistics" will highlight six items that must be considered as part of a total systems approach: passengers, baggage, cargo, mail, utilities and supplies.

* * *

Lloyd Balsam, Nortronics, has attended a week-long American Management Association course in Fundamentals of Program and Project Management for which he served as co-chairman.

The course was designed for those who are assigned to a project team as manager or members of a project management staff.

Arlene Sloan, Nortronics secretary at NASA's Ames Research Center, won a series of honors at the Eighth Annual Sports Car Olympics held over the Labor Day weekend at Squaw Valley.

Miss Sloan teamed with **Jack Grimes** to win first in class in the Rallye to the Valley, second in the Variety Rallye and fifth in the Time and Distance Rallye. In individual standings her Toyota was judged second in the Concours class; third in the Sports Car Quiz, third in the Autocross I and fourth in Autocross II. Teaming with **Peta Weseman** as navigator, she took first in class in the Funkhana and had the top time of the day.

* * *

Dr. Oskar Doehler, one of the world's foremost electron tube scientists, has joined Warnecke Electron Tubes, Inc. as chief scientist.

Warnecke is affiliated with The Hallicrafters Company, a Northrop subsidiary.

* * *

Rosemary Hussey, assistant editor-business manager of Northrop News, handles many unusual requests. Most can be accomplished routinely, but some, like a recent request from England, takes a little special effort.

S/Sgt. E. C. Goldbach, USAF, instituted it. Besides some nice words about the News, he wrote that he and his superior are Californians who will be rotating stateside soon and are in the market for acreage on which to build homes. He singled out four classified advertisements in the News that interested them and asked for more information.

Since the News does not reveal the names of its advertisers, Mrs. Hussey had to take an alternate course. She contacted those who placed the ads, suggesting they get in touch with Sergeant Goldbach direct.

* * *

M. A. "Cy" Seeley, Nortronics, has returned to Anaheim from a trip to the United Kingdom to participate as a member of the Capability Evaluation Review Team which certified the United Kingdom's Type C, MK 6 and MK 7, MITRE capability of the repair and calibration facility in Faslane, Scotland.

IN MANY WAYS

Northrop Supports Higher Education

Northrop's support of higher education now covers a broad range of activities from student scholarships to direct financial aid to universities and colleges.

For these purposes, Northrop is currently disbursing some $145,000 annually, and over the past five years has expended a total of nearly $600,000. The funds are distributed through contracts with six universities under the Industrial Affiliates program and in the form of grants under the Aid to Higher Education program. (These programs have no connection with Northrop's Educational Refund Plan, under which Northrop employees are reimbursed for the costs of taking university courses.)

Administration

To administer these programs, a University Relations Advisory Board was established five years ago by President Thomas V. Jones.

The board is chaired by Richard E. Horner, senior vice president-Technical. Members of the board are Dave Badger, member of Technical Management, Norair; Stan Church, Corporate director of Technical Planning and executive secretary of the board; George Grogan, vice president and manager of Engineering, Ventura; Lee Hausman, executive advisor, Nortronics; Dr. Donald Hicks, vice president of Corporate Research and manager, Northrop Corporate Laboratories; and Frank Smith, Corporate director of Industrial Relations.

From its support of higher education, Northrop receives the benefits of advanced research from some of the top universities in the land, and helps to discover and nurture the country's future leaders.

Scholarships

Northrop awards college scholarships to sons and daughters of Northrop employees. To receive these awards, they must qualify as finalists in the National Merit Scholarship program. In the last 10 years, Northrop has sponsored 47 scholars at colleges and universities of their choosing. The 35 currently receiving aid are attending classes at each level from freshman to senior. The financial assistance varies from $1,000 to $6,000 per student for the four years of college, depending on the student's financial need.

The merit scholarship program includes sponsoring a leading Negro high school graduate each year. Currently, two such achievement scholars are attending Yale and Cornell Universities under Northrop sponsorship.

Close Ties

Perhaps less well known is Northrop's Industrial Affiliates relationship with six major universities. The universities are Massachusetts Institute of Technology, Case Western Reserve University, California Institute of Technology, Princeton University, Stanford University and the University of Southern California. In return for the funds allocated to these schools, Northrop has access to research results, technical papers and library reference material, representation of technical conferences, faculty contacts at all levels and the opportunity to initiate new research programs or become involved in other ones of special interest to the company.

The Aid to Higher Education program, in addition to awarding the National Merit Scholarships, grants funds to support research of special interest to Northrop. For example, Northrop recently made a $22,000 grant to USC for acquisition of an electron beam floating zone refiner, which is a specialized type of furnace used for the purification and growth of crystals.

The Aid to Higher Education program also supports educational institutions in communities where Northrop has facilities. Recipients of these grants include Northrop Institute of Technology; California Lutheran College, Thousand Oaks; the University of Alabama, Alabama A. & M. and Oakwood College, the latter three institutions located in the Huntsville, Alabama area, where Northrop is involved in support of NASA's Marshall Space Flight Center; and 12 schools comprising the independent colleges of Southern California.

EQUIPMENT GRANT of $22,000 is represented in Northrop check being presented by Dr. Donald Hicks (right center) to Dr. Zohrab Kaprielian of USC. Looking on are D. M. Badger (right) of Norair and Dr. William Spitzer of USC. Grant, typical of Northrop's support of higher education, was for purchase of an electron beam floating refiner.

Big Savings Are Now Available On Hallicrafters Products

With Christmas only three months away, The Hallicrafters Company has initiated a special offer of its products to Northrop employees at savings up to 60 per cent off retail.

The discounts became effective on September 1, and will remain in effect through December 24.

Hallicrafters, a Northrop subsidiary, manufactures quality products in amateur, shortwave, high fidelity and standard broadcast radio, as well as two-way communications equipment, direction-finding radios and related items.

Among the items offered for employee discount are clock radios, shortwave and FM radios, and an AM-FM multiplex shortwave stereo receiver with more than 50 watts of peak power.

The AM-FM multiplex shortwave stereo receiver, the CR-3000, has an attractive wooden cabinet which will blend well with fine stereo turntables, speakers and components. Its regular list price is $229.95, but it is being offered to employees for $89.95—a saving of more than 60 percent.

An AM-FM clock radio, which retails for $49.95 in a plastic cabinet and $59.95 in walnut, is available to Northrop employees at $24.95 in plastic and $27.95 in wood.

Price information and product literature may be obtained at any Personnel Activities office. Employees must complete a purchase request form at Personnel Activities. Delivery requires 10 to 14 days from the time Hallicrafters receives the order at its office in Rolling Meadows, Illinois. There is a shipping charge of $3 per item.

Pershing's Flip Chart Easel Becomes a World Traveler

Harold Pershing's idea has been all over the world with Northrop employees. In addition, it is in evidence in hundreds of offices throughout the corporation.

Mr. Pershing's idea, a portable flip chart easel, has also been licensed for manufacture and sale by the Converted Products Company of Encino, California.

The flip chart easel has large steel rings, much like a binder notebook, which allow charts to be easily replaced. A special case accommodates two charts for travel compactness.

The easel may be used in three ways. It can be placed on a desk or table; it can be attached to a tripod for standing presentations; or it can be mounted on a wall.

Gus Meuleman, Norair Manufacturing Research and Development, designed the wall mounting and redesigned the original rings on the easel for Mr. Pershing, a long-time Norair Graphics employee.

IS IT NEWS?
Ext. 4273
HAWTHORNE

Hawaiian Tour Reservations Being Accepted

Reservations are now being accepted at all Northrop personnel Activities offices for the annual NRC-sponsored yearend Hawaiian holiday.

An organization meeting for those interested will be held at 7:30 p.m. September 26 at the Alondra Club on Prairie Avenue, Lawndale.

Two tours are available. An eight-day excursion departs December 25 and returns January 1. Total cost: $330 per person. For those who can apply vacation time, a special 12-day tour is also available, departing December 21 and returning January 1. The cost: $385 per person.

Both tours will feature travel aboard Pan American Airways.

MONDAY WILL BE ROLLOUT DAY FOR THE FIRST BOEING 747 JETLINER

WITH 747 ROLLOUT

New Era of Commercial Air Transportation Nears

A new era in commercial air transportation moves one step nearer reality next week when The Boeing Company rolls out its first 747 jetliner.

Following rollout, scheduled for September 30, the initial 747 will go into preparation for its maiden flight, planned for December 17.

The largest commercial jet airplane ever constructed in the United States, the 747 is a giant among transports by any yardstick.

It has a wingspan of 195 feet, length 231 feet, and the vertical tail section towers 63 feet, approximately five stories, above the ground. The main passenger deck is 20 feet wide and 190 feet long, and will have various seating arrangements to accommodate from 350 to 493 passengers. It has a gross weight of 710,000 pounds. A cargo version will have a 100-ton capacity. A flight crew of three or four, plus 16 stewardesses, will serve each flight.

Its four jet engines, each capable of developing 43,500 pounds of thrust, will rocket the 747 along at cruising speeds of 625 miles per hour, nine-tenths the speed of sound. The 747 has a range of over 6,000 miles and a service ceiling of 45,000 feet.

Northrop Corporation plays a major role in the 747 Program. It is responsible for the design and manufacture of the 153-foot-long main passenger compartment (at Norair), the 80-foot-long fiberglass wing fairings (at Ventura), fuselage stringers (at Nortronics-Anaheim) and the majority of flooring for the passenger and cargo compartments (at Northrop Architectural Systems, Inc.).

Northrop Norair produced the assembly fixtures and master molds for its own 747 manufacturing tooling requirements as well as all major fixtures for Boeing's final assembly fuselage work. Included were 40 huge all-aluminum fixtures, some up to 100 feet long and three stories high. Including small hand tooling, Norair has had to equip itself with more than 25,000 tools to produce the passenger compartment for the 747.

The estimated weight of raw materials required to produce Northrop's work for each 747 is approximately 122,000 pounds. More than 9,000 square feet of sheet aluminum, equivalent to the floorspace of five ample sized homes, is used to cover each set of fuselage components for the 747.

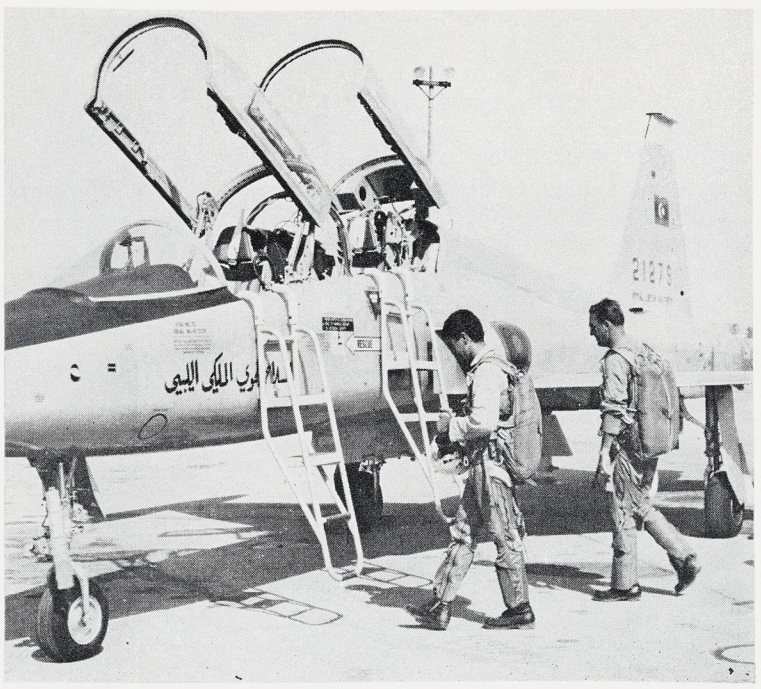
Northrop Ventura's unique 747 wing fairings consist of variable-thickness plastic honeycomb cores sandwiched in glass fiber, with molten-spray aluminum coating bonded to the exterior side of all sections. It results in a reinforced fiberglass structure that is probably one of the largest of its kind ever produced and represents a major advancement in the application of plastics to aircraft.

At Nortronics Anaheim many Northrop innovations have been introduced in the production of aircraft stringers which have resulted in considerable savings in production cost and weight.

Each set of 747 fuselage components contains 800 stringers that would stretch three and one-half miles, laid end to end. They are roll tapered, mass joggled, yoder-rolled and stretch-formed by a variety of entirely new methods.

Lightweight, yet rugged, titanium and aluminum flooring for the 747 is produced by Northrop Architectural Systems. The comparatively thin (.005 to .010 inches) titanium and heavier (.016 to .010) aluminum sheets are bonded to the top and bottom surfaces of fire-resistant polyvinyl chloride foam material. The resulting 0.4-inch-thick strong resilient panels, ranging in size up to 4 feet by 12 feet square, are delivered to Boeing as ready-to-install interchangeable panels.

Northrop Corporation and The Boeing Company have enjoyed a close working relationship since World War II when Northrop produced assemblies for the Boeing B-17 bomber. Since then, Northrop has performed work on Boeing's KC-135 tanker aircraft and tooling for the Boeing 727 commercial jetliner. In addition, Northrop has manufactured outer wing panels and aft fuselage sections for Boeing's 707 jetliners continuously for the past 14 years in a program that is still in progress.



TRAINING FLIGHT—Major Bashir Muskashbir, commander of the Royal Libyan Air Force (left), and Lt. Colonel A. G. Schneider, USAF, chief of training for the RLAF, prepare for a flight in a Northrop F-5B. Note markings on fuselage. Libya is among latest allied nation to receive Northrop F-5 tactical fighters.

LIBYAN AIR FORCE MARKS BIRTHDAY

"Royal Libyan Air Force Day" has marked the fifth anniversary of the founding of the Kingdom of Libya's air arm.

One of the features of this observance was a flyby of aircraft by the RLAF, including the supersonic Northrop F-5 tactical fighter. Libya is among the latest of the Free World nations to receive F-5's as part of its defense force.

Libyan Prime Minister Abdulhamid Bakkoush and Minister of Defense Hamed Abeidi led high-ranking officials at the ceremonies marking the anniversary. Maior General Rollen Anthis, commander of the USAF's 17th Air Force and Colonel Edward Cutler, 7272nd Flying Training Wing, led representatives of the USAF taking part.

The RLAF now flies C-47 transports, T-33 trainers and the Northrop F-5, its supersonic punch. Pilots and maintenance personnel from the RLAF attended training at Williams AFB, Arizona, to prepare them for the utilization of the F-5.

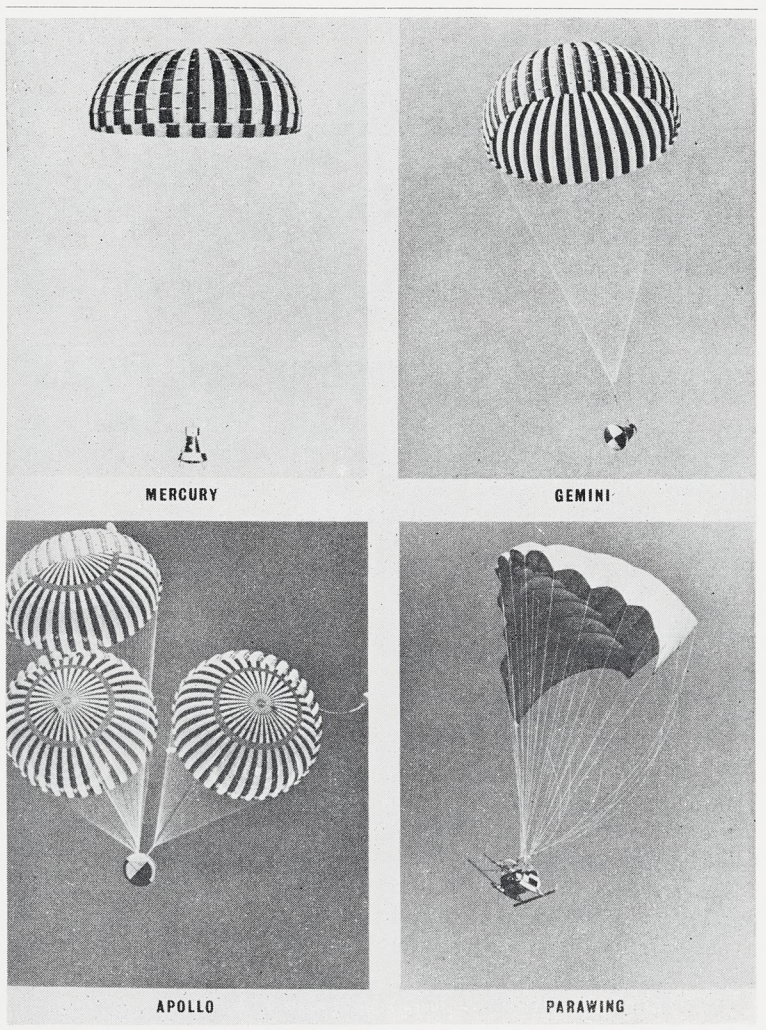
Don Kindy is the Northrop technical representative with the RLAF.

All-Northrop Luau Set For Famed 'Tikis'

All the lush tropical grandeur of the famed "The Tikis" jungle compound in Monterey Park is being readied for an all-Northrop Luau set for October 5, 7 p.m. to 1 a.m.

Tickets, now available at all Northrop Personnel Activities outlets, sell for $6 per person. They are good for admission, an evening of entertainment and dancing to four different bands, unlimited use of the many features that include a banana train ride, an erupting volcano, special island hostesses, a scrumptuous island feast, and many special acts and performances.

Dinner will be served from 7 to 10 p.m. Only those 21 years of age or older will be admitted.



PARACHUTE TECHNOLOGY—From Mercury to the Parawing, all of these National Aeronautics and Space Administration landing systems have been manufactured by Northrop Ventura. The triple-parachuted Apollo Earth Landing System is scheduled to get its first manned test during October. Parawing testing continues on weekly basis at Navy facilities in El Centro.

WHAT DO YOU THINK?

Would You Date An Individual Selected For You by a Computer

Miss Card

Kathy Card, clerk at Norair Santa Fe:

Definitely not. A computer can do little more than match people with the same likes and dislikes. So you meet and what's new? There is nothing really different, no surprises. I like to meet new people, but prefer to do it my way.

Mr. Neidhardt

O. J. "Skip" Neidhardt, Polaris programmer at Anaheim:

No, I wouldn't. I don't believe that the questions upon which the computer's findings are based are relevant to a desirable dating relationship. I believe in choosing someone on the basis of personality and physical being as well as on their likes and dislikes.

Miss Zuniga

Lupe Zuniga, secretary at Ventura:

No. That's totally unromantic. It's unfeeling. It's cold. It's impersonal. I certainly don't believe in that at all.

Mr. Hester

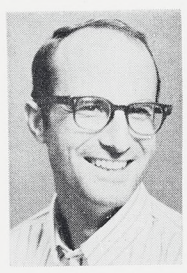
Cary Hester, aircraft mechanic at Norair:

Why not? I think it might be fun. We are living in a changing world. Variety is a part of it. I am ready to go along with it. Put me down as approving, but give me a little advance notice as to when this is all happening.

Miss Nofziger

Jill Nofziger, control clerk at Anaheim:

Yes. I think the results would be interesting. However, I wouldn't seek out the services of a computer. Still, it would be fun to see what an unemotional machine could come up with.



Mr. Smalley

Tom Smalley, cinematographer at Ventura:

The computers have never asked me to arrange anything for them, so I don't think I'll ask them to do anything for me. No. I wouldn't do it.

AN EXCHANGE STUDENT

Meyer Family Host to German Youth

Ralf Dost is a senior at Westchester High School. He swims, skis and plays folk songs on his guitar.

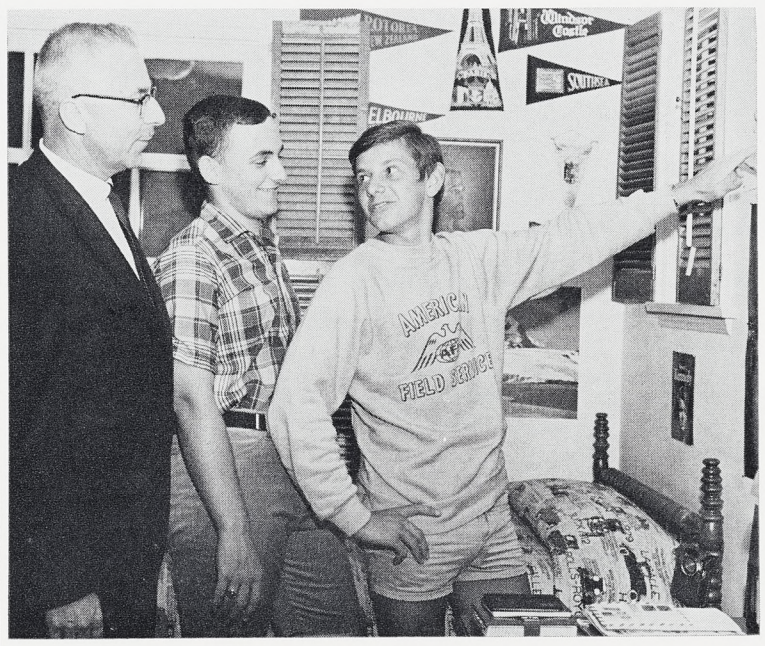
Sounds like a typical teenager. Right?

Wrong. Ralf Dost also speaks fluent German, French and has studied Russian, and plans a career in politics or public service when he graduates from college.

It's not surprising that his German is fluent, because Ralf Dost, an American Field Service foreign exchange student, is a resident of Eickhorst, West Germany.

Between now and next June or July, he'll be living with Mr. and Mrs. James Meyer of Westchester, and their 17-year-old son, Bruce.

Jim Meyer, a 10-year-man at Northrop Norair, is a member of the Boeing 747 Materials and Process Engineering group.



AMERICAN VISITOR—Ralf Dost (right), an American Field Service foreign exchange student from Germany, talks with his host in the United States, James Meyer of Westchester, a 10-year Northrop man, and 17-year-old Bruce Meyer. Bruce and Ralf are seniors at Westchester High School.

Even though the school year began only last week, the Meyer family has been thinking about the American Field Service (AFS) for several years.

"Bruce met an exchange student from Switzerland last year," Mrs. Meyer said, "and we became friends with the boy.

"When he went back to Europe in July, he recommended us to AFS as a home for a foreign student. Then we were asked if we could take Ralf. He arrived on August 12."

The Meyer family has kept its new guest occupied. Shortly after his arrival, they went on vacation, touring Oregon, Washington, British Columbia and Alberta.

Mrs. Meyer said the family hopes to take Ralf to Yosemite National Park next Easter, when he and Bruce will have a week of vacation from school. Bruce is also a senior at Westchester.

Because of his fluency in English, which is required in Germany, Ralf is able to attend regular classes.

A year in a foreign country obviously gives a person new insight. This is what Ralf hopes will help prepare him for a career in public life or journalism.

"This is a wonderful experience for all of us," Mrs. Meyer said.

Calm Mr. Creekbaum Comes To Life on Race Tracks

George Creekbaum is a champion race car driver.

In two-and-one-half years and some 50 starts in drag strip racing, he has only lost twice.

The period of George's racing career coincides with his employment as a Reproduction operator at Anaheim. He's been doing both since 1966. But his quiet, easy manner would never reveal that he recently established a new quarter-mile track record for speed and elapsed time in his "stock automatic" class 1959 Dodge — 85.56 miles per hour in 16.40 seconds.

Before and since he has collected a long string of victories in weekly and National Hot Rod Association (NHRA) point meets. Some of these wins have brought trophies and certificates, and about 40 have brought cash prizes of from $30 to $100. They also have brought George recognition from professionals such as Ramon Lowe, NHRA national record holder, and the fans who attend the weekly events at Orange County International Raceway.

Elsewhere, George has won races at Fontana, Irwindale, Carlsbad, the Pomona Fairgrounds and at the Lions Drag Strip in Long Beach.

In the brief period that he has been racing, George has owned nine cars, most of which have seen weekend action. He's had a '67 Fiat, '59 Dodge, '59 Ford, '59 Studebaker, '57 Pontiac, three '55 Chevys and a '40 Ford pickup. He still owns one of the Chevys and the pickup.

George's most interesting — and amusing — experience came one Sunday when he was all set to race and suddenly found himself without a car. At the last minute he commandeered his wife's '55 Chevy as she was on the way to the market. He made it back to the track just in time to win $30 for first place in his bracket. And he was able to return with the car and the money for his wife to do the marketing.

George longs for the day when he can drive his own rail car "down the quarter-mile asphalt track at 240 miles an hour in something like 6.5 or 6.7 seconds, or faster."

But, for now, George is seeking a sponsor for future races. He'd like the opportunity to prove his ability to an owner or dealer interested in having their car raced by a champion.

GEORGE CREEKBAUM WITH RACING AWARDS

RUZIECKI BOYS TOP LINKSMEN

Two sons of a Northrop employee have scored impressive golf tournament victories. John Ruziecki, a machinist at Norair, is the proud father of these rising links stars.

John, 17, has won the area Junior Chamber of Commerce tournament at Alondra Park which qualified him for a place in the State J.C. tournament in Victorville, where he placed fourth.

Jim, 14, has won the second flight of the Los Coyotes Lee Hammil tournament, "the biggest junior golf tourney in the world." His scores were 83, 77 and 77.

New NRC Ballroom Dance Class Opens

Featuring beginning eastern swing and the rhumba, a series of NRC dancing instructions are being held at the VFW Hall, 4563 West 131st Street, Hawthorne.

KEALEY TOES THE MOUND FOR ANGELS

A Northrop Norair son has had the unusual experience of being called to the major leagues over a weekend, then making mound appearances on both Tuesday and Wednesday nights.

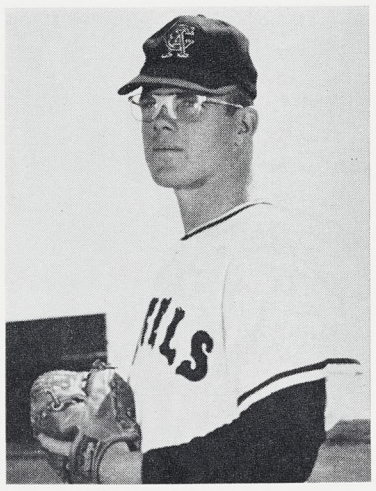
He is Steve Kealey, son of Jane Kealey of the Upholstery group of Paint and Process at Norair.

Young Kealey, of the California Angels, had just completed a regular season pitching for the Texas League champion El Paso ball club when he received the call to report to Anaheim.

He arrived September 8 and on September 11 and 12 pitched as a relief pitcher against the league-leading Detroit Tigers.

A product of Torrance High School, Steve pitched for Idaho Falls of the Pioneer League in 1966, advanced to Davenport of the Midwest League in 1967 and worked this season for El Paso, a Class AA team. Because of his obligation with the Marine Reserves, he missed most of spring training and part of the 1968 season.

Specializing in relief pitching, Steve had a 6-2 win-loss record and a 2.40 earned run average at El Paso.



STEVE KEALEY

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Buick, 1967 Riviera, a/c, 2-dr., full power, $4,000. 213-394-0034, 213-399-2092. A

Dodge, 1964 Dart GT, 4-spd., radio, $850. 213-372-5367. A

Jeepster, 1949 Willys, r/h, rebit. eng. & trans., $450. Box 1901. A

Corvair, 1963 Monza, 4-spd., $375. 213-370-7749. A

Volkswagen, 1960 w/'63 eng., new tires, $600. 213-374-3044. A

Volkswagen, 1963 sedan, r/h, 2 new tires, $800. 714-635-0229. A

Pickup, 1960 F-100 Ford, V-8, w/camper, $800. 213-631-6933. A

Pickup, 1964 Chev. ¾ ton, w/camper, hvy. duty springs, special tires, $1,950. 213-838-1926. A

T-Bird, 1963, full power, fact. air, $1,100. 805-495-0507. A

Volkswagen, 1966, 2-dr., lug. rack, $1,325. Box 1902. A

Mustang, 1965, 6-cyl., 200 cu. in., p/s, p/b, r/h, auto. trans., $1,495. 213-477-7741. A

Station Wagon, 1959 Dodge, 9-pass., p/s, p/w, $195. 213-831-6583. A

Chevrolet, 1957 2-dr., 6-cyl. std. shift, r/h, $425. 213-325-4580. A

Rambler, 1963 770 Classic, V-8, stick shift, with o/drive, p/s, r/h, $800. 213-542-2098. A

Ford, 1934 coupe, 5-window, $525. 213-836-0068. A

Chevelle, 1966 S.S., 396 eng., 4-spd., a/c, p/w, $2,150. 213-324-8747. A

Station Wagon, 1956 Chevrolet, needs paint, $100. 213-370-4643. A

Mustang, 1967 convt., V-8, auto. trans., p/s, p/disc brakes, $2,100. 213-377-9666. A

Buick, 1963 Skylark, V-8, p/s, $995. 213-830-6163. A

Chevrolet, 1961 Bel Air, r/h, air, auto., p/s, $550. 213-674-6409. A

Buick, 1967 Skylark, 2-dr. h/top, a/c, r/h, p/s, $3,000. 213-567-5261. A

Station Wagon, 1965 Pontiac Bonneville, hvy. duty suspension, a/c, p/w, p/s, p/b, rack, $2,050. 213-361-1097. A

Mercury, 1961 Mont., 2-dr. h/top, air, power, $495. 714-646-1543. A

Scout International, 1964, all-wheel dr., hubs, $1,200. 714-633-3788. A

Chevrolet, 1959 bus. coupe, new tires, $150. 213-596-2920. A

MGTD, 1953, new top & tires, $1,000. 714-774-1137. A

Corvette, 1962, 4-spd., fuel injection, posi., $1,375. 213-329-2538. A

Station Wagon, 1958 Plymouth, full power, radio, $200. 213-292-4958. A

Station Wagon, 1952 Jeep, 4-wheel dr., r/h, $595. 213-363-5205. A

Mustang, 1965, V-8, 289, r/h, 4-spd., lge. tires, $1,599. 213-428-6075. A

Ford, 1960 Sunliner, $225. 213-370-6752. A

Model A, 1929, $200. 213-326-1409. A

BMW 1600, 1968, AM-FM radio, radial ply tires, $2,500. 213-772-5752. A

Volkswagen, 1956 sedan, $200. 213-673-3724, 213-675-3948. A

Chrysler, 1963, 4-dr., p/s, p/b, r/h, $750. 213-378-4541. A

Falcon, 1962, 2-dr., r/h, stick shift, $450. 213-328-3306. A

Station Wagon, 1965 Ambassador Deluxe 990, sports shift, $1,900. 805-498-2795. A

Pickup Truck, 1957 Ford, 8′ bed, reblt., with or without Globe cabover camper, $1,100. 213-830-4265. A

Studebaker, 1961 Lark VII, 2-dr., auto., $250. 213-675-4380. A

Pickup Truck, 1966 Ford F-100, ½-ton, auto. trans., many extras, $1,450. 714-494-6940. A

Chevrolet, 1967 Impala, V-8, auto. trans., p/s, p/b, fact. air, $2,275. 714-638-2025. A

Corvair, 1963 Monza, r/h, auto. trans., $750. 213-375-4635. A

Chevrolet, 1957 Nomad, 283 w/quad. stock, $1,000. 213-382-2260. A

Household Items For Sale

Bedspreads, 2 twin, $5 ea. 714-879-7625. B

Light Fixtures, 3 hanging type, $40. 213-378-3055. B

Dutch Door, 2 pcs., 32″ w., w/latching & access. hardware, $23. 213-293-5993. B

Bar, portable, 4 ft. long, storage shelves, glass-covered top, $15. 213-671-0560. B

Couch, green, approx. 7′, $19.50. 213-679-6256. B

Dining Room Set, blonde, Duncan Phyfe, ext. table, uphol. chairs, china cabinet, $180. 213-375-1395. B

Box Springs, 2, twin, foam mattresses, metal frames, bedspreads, matching curtains, $50. 213-676-5000. B

Sofa, 9′ grey, $45. 213-474-1780. B

Household Items For Sale

Dining Suite, French provincial, 6 leather chairs, pad, $150. 805-498-2839. B

Couch & chair, rattan, other matching items, $100. 213-376-8250. B

Sewing Machine, White, cabinet, $45. 213-752-6379. B

Dinette Set, 42″ table w/leaf & 4 chairs, $45. 213-675-1953. B

Osterizer, deluxe, $35. 213-754-4510. B

Dryer, G.E., elec., $50. 213-675-5230. B

Bed, dble., box spring, mattress & stand, $50. 213-672-0879. B

Refrigerator, Hotpoint, 12 cu. ft., $100. 213-370-7600. B

Clothes Hamper, baby's, white wicker, $4. 213-835-3869. B

Dresser, walnut, stain-proof top, 6 drwrs., matching mirror, $30. 213-346-3751. B

Refrigerator-Freezer Combination, deluxe, $200, other items, various prices. 213-421-9986. B

Couch, light color, 7′, curved, $35. 213-377-5322. B

Beds, 2 folding-type, 39″ wide, $7 ea. 213-329-9484. B

Mattresses & box springs, twin size, $40 set. 213-323-8213. B

Stove, O'Keefe & Merritt, 4-burner, center grill, $25. 213-323-4288. B

Dishwasher, G.E. portable, white, 1 yr. old, $100. 213-645-5786. B

Hide-A-Bed, Simmons, dble. size, brown w/ blue slip cover, $25. 213-324-2992. B

Miscellaneous For Sale

Shotgun, Nikko, 12 ga. o/u, 28″ mod., full ventilated rib, $200. 213-532-7846. C

Ski Boat, 14′, trailer, 35 h.p. Evinrude w/ elec. starter, $550. 213-675-6482. C

Boat, 19′ 1965 Glastron V195, Mercruiser 150, sleeps 4, tanden trailer w/power winch, $3,600. 213-323-6366. C

Motorcycle, 1966 Suzuki, 250 cc X6 Hustler, $425. 213-532-7017. C

Bicycle, girl's 26″, $10. 213-430-1388. C

Lapidary Equipment, bench type tumbler on stand, rock cutter, arbor & discs, $125. 213-327-1797. C

Band Saw, 3-whl., drill press, 1″ & 6″ belt sanders, stands w/motors, $200. 213-941-1865. C

Motorcycle, Indian, 500 cc single, bored, $350. 213-532-7849. C

Auto Parts, Chevrolet, set of 283 powerpack heads, 4-bbl. intake manifold, AFB carb., other items, $50. 213-371-4560. C

Honda, 1966 CB 160, new tires, $250. 213-675-6660. C

Camera, 35 mm Zeiss Ikon Contina, 1:3.5, f/45 mm self-timer w/flash attach., $25. 213-327-4267. C

Boat, 14′ runabout, plywood & fiberglass, trailer, $200. 213-968-2345. C

Radio, Realtone AM-FM/MPLX receiver, incl. spkrs., $50. 213-287-6413. C

Honda, 1966 Scrambler 305, $275. 213-675-7932. C

Home, 2-story, corner lot, 4-bdrm., 2 baths, fam. rm., cpts., dps., f/place, patios, 3-car gar., $3,500 equity, $31,950. 714-827-1958. C

Tire, 5.60x15, for Volkswagen, $5. 213-370-7904. C

Boat, 14′ Traveler, 1965 Comet model, 40 h.p. Evinrude, elec. starter, trailer, $750. 805-498-2465. C

Bouncing Horse, child's, $12. 213-644-6372. C

Typewriter, std. IBM, elite type, $300. 213-427-0674. C

Sailboat, 28′ sloop, sleeps 4, inbd. eng., main, jib, genoa & spinnaker, $5,000. 213-378-4352. C

House, 3-bdrm., 2 baths, cpts., dps., bltins, patio, close to Del Amo shopping center, $27,950. 213-325-3724. C

Lot, 50′ x 170′, lifetime membership in Lake Elizabeth Ranch Club, o/looks golf course, $2,500. 805-252-2468. C

Organ, elec., w/bench, Conn Minuet, $1,000. 213-679-5087. C

Ski Boat, 14′, 30 h.p. Merc, trailer, ski, $500. 213-324-1284. C

Aquarium Pump, Silent Giant & auto. fish feeder, $12. 213-372-1632. C

Travel Trailer, 1959 Flamingo, 19′, self-contained, $1,500. 213-377-1008. C

Sailboat, 30′ Windjammer cruising cutter, 4½-ton, glass o/plywood, outbd., sleeps 4, many extras, $8,500. 213-374-4257. C

Motorcycle, 1967 Honda, 90 cc, w/side bags, other extras, $250. 213-324-3331. C

Motorcycle Carrier, bumper mounted, $13. 213-670-4166. C

Accordion, black, 120 bass Castle, semi-pro. size, case, $200. 213-324-6770. C

Lot, Green Valley Lake area, 60′ x 275′, paved road, lake share incl., $3,500. 213-833-4191. C

Car Top Carrier, $5. 213-679-8525. C

Walker, w/seat, Everest & Jennings, $60. 213-324-1908. C

House, 3-bdrm., 2 baths, fam. rm., sep. living rm., 2 f/places, 2-car gar., Hollyglen area, $46,900. 213-679-8687. C

Cemetery Lots, 4, Ocean View sect., Green Hills Memorial Park, incl. perpetual endowment care, $2,260. 213-326-3135. C

Condominium Home, 2-bdrm. & den, rec. facilities, adult community, pets o.k., $28,500. 213-326-1331. C

House, 4-bdrm., 1¾ baths, family rm., bltins, cpts., dps., f/place, covered patio, dble. gar., 5 yrs. old, near El Camino, $39,500. 213-329-0086. C

Miscellaneous For Sale

Motorcycle, 1964 Yamaha, 250 cc, $300. 213-644-2618. C

House, Palos Verdes Pen., 4-bdrm., 2 baths, 8 yrs. old, 5¼% financing, $38,000. 213-676-5425. C

Snare Drum, Gretsch, 8 lugs, case & stand, $50. 213-325-3452. C

House, 2-bdrm., den, heated pool, 45′ x 150′ lot, cpts., dps., near Northrop, $27,500. 213-679-4778. C

Golf Clubs, balls & bag, $40. 213-826-3061. C

Chain Saw, David Bradley, 20″ swing, extras, $100. 213-676-4915. C

House, 3-bdrm., 2 baths, fam. rm., 18′ x 38 pool, Palos Verdes Pen., $44,500. 213-377-6029. C

Heater, dble. wall Gaffers & Sattler, 2 yrs. old, 35,000 b.t.u., $30. 213-644-3116. C

Motorcycle, 1967 Yamaha, 100 cc, G.Y.T. installed, many extras, $300. 213-644-3007. C

Dog Kennel, suitable for air travel, lge., $10. 714-529-4788. C

Ham Gear, Swan 400 w/a.c. pwr. supply & 2 matched finals, $400. 213-645-1274. C

Poodle, male, min., apricot, obedience winner, AKC reg., $50. 418-253-4266. C

Mini Bike, Taco, $65. 213-425-8366. C

Stereo, portable, walnut, all transistor AM-FM, 2 yrs. old, $70. 213-327-2447. C

Sailboat, 15′ Glastron, 98 sq. ft. of sail, 2-place racer, trailer, $500. 213-982-0716. C

Sailboat, 14′ Super Satellite, many extras, w/trailer, $750. 805-483-5644. C

Lot, ½ acre, in Joshua Tree, all utilities avail., $3,500. 714-531-3840. C

Trumpet, Olds Ambassador, $98. 213-645-0945. C

Typewriter, Royal Quiet-Deluxe, portable, w/ table, $25. 213-870-1550. C

Rifle, 7 mm Remington magnum model 700 ADL, approx. 60 rounds fired, $115. 213-391-5591. C

Shotgun, Sears, Ted Williams, model 27, 12 ga., ventilated rib, adj. choke, $83. 213-676-1985. C

Typewriter, 12-point IBM Exec., 16″ carriage, reconditioned, $220. 213-639-3825. C

Patio Table, redwood, & benches, $10. 213-324-4817. C

Skis, Kneissl Riesen slalom, 210 cm. & Marker bindings, $25. 213-363-2113. C

Fall, long, dk. brown, human hair, $35. 213-329-3593. C

Horse, chestnut mare, sound, $400. 213-377-2782. C

Bicycle, girl's 20″, front basket, $15. 213-679-6334. C

Tape Player, stereo, 8-track, Bendix Sapphire VIII, AM radio, dash mount, 1967-68 VW, $80. 213-635-2602. C

TV, 21″ Admiral console, color, 3 yrs. old, $150. 714-835-6772. C

House, on 2.3 acres, master planned apt., in Agoura, $67,500. 213-783-8271. C

Golf Clubs, Spalding, Henry Ransom, 1 & 3 woods, 3-9 irons, putter, $30. 213-370-6734. C

Camping Trailer, Scotsman, 3-burner stove, 25-lb. butane ice box, sleeps 5, many extras, $525. 213-676-5219. C

Mobile Home, 10′ x 41′, 1-bdrm., expando, in adult park, 10 min. from Northrop, $3,500. 213-324-5140. C

Surfboard, 9′ 6″, $40. 805-495-6083. C

Acreage, 5 acres, Antelope Valley, $45 dn., $45 mo., no int., $4,500. 213-378-1026. C

Clarinet, Selmer Signet Special, all wood, $125. 213-671-6562, 213-673-5663. C

Flute, Selmer Bundy, case, $75. 213-375-6773. C

Archery Equipment, 7 bows, man's & woman's chests, arrows & books, $40. 213-430-2619. C

Surfboard, 7′ 10″ Weber, mini feather, 3 mos. old, $80. 213-374-4909. C

TV, Zenith, Space Command 400, 21″ console, walnut, $25. 213-325-8175. C

Mimeo Machine, Gestetner, 300 series, $300. 213-676-0197, 213-676-7273. C

House, 2-bdrm. & den, lge. fenced yd., Culver City, $27,500. 213-883-0430. C

Piano, grand, w/bar top, stools, & bench, Marshall & Wendall, $400. 213-378-2193. C

Regency Ranger, C.B., extra speaker, $90. 213-569-9306. C

Piano, black & gold w/mirror, upright, $225. 213-324-7730. C

Honda, 1965 CB 177, 305 cc, $295. 213-547-4689. C

Air Conditioner, hvy. duty, water-cooled, w/ stand, 1 yr. old, $20. 714-528-2382. C

Bar, w/sink, top & mosaic tile front, 11′ long, $100. 213-644-3913. C

Pistol, 45 cal. auto. M1911 Remington, $100. 213-675-8390. C

Home, w/lge. pool, cabana, 3-bdrm., 2 baths 2,000 sq. ft., bltins, det. gar., 15 min. to Norair, $31,500. 213-372-6830. C

Brazing & Cutting Rig, hvy. duty Victor, all size welding & cutting tips, other arc & gas equip., $125. 213-373-3396. C

Trailer, 4′ x 6′, metal, $50. 213-371-8051. C

Boat, 20′ Pacific Starliner, 75 h.p. Johnson, completely equipped, 15″ whl. trailer, $1,500. 213-375-5914. C

Trimobile, 1960 Daihatsu, $100. 213-943-5842. C

Wig, blonde, hand-tied, $50. 213-545-2431. C

Tennis Racket, w/3 ball pocket & frame, $10. 213-537-3098. C

Motorcycle, 1947 Harley Davidson 3-wheeler, Triumph front end, $150. 213-370-0594. C

Cartop Carrier, $5. 213-329-3286. C

Miscellaneous For Sale

Trail Bike, Yamaha, 55 cc, $120. 213-321-4801. C

Motorcycle, 1946 Ariel semi-chopper, 550 cc single, new modified eng., extras, $600. 213-672-1738. C

Home, 3-bdrm., in Holly Park, many improvements, 5 min. from Norair, $26,950. 213-323-4729. C

Tape Deck, for auto, 4-track w/2 spkrs., for 12 volt battery, $30. 213-750-2657. C

House, 3-bdrm., 2 baths, stucco, rental in back, $20,000. 213-671-7914. C

Picture Frames, hand-carved, Mexican, std. sizes, $4.70 to $12.65. 213-465-7173. C

Home, Rolling Hills area, 3-bdrm., 2½ baths, fam. rm., 2 f/places, w/horse lot, $89,500. 213-377-1043. C

Lot, o/looking Lake Elizabeth, on paved street, electricity & water, 10% dn., $4,150. 805-947-8389. C

Slide Magazines, 13, Airequipt circular, $1.25 ea. 213-775-1066. C

Encyclopedias, American Peoples, yearbooks, atlas, & shelf, $95. 213-396-6739. C

Engine, 1964 Mercury outbd., 65 h.p. w/ controls & new tach., $565. 213-479-5653. C

A.D.F., Lear, recent o/haul, 12 volt, $225. 213-832-1672. C

House, 3-bdrm., fam. rm., 1¾ baths, bltins, recently redecorated, det. gar., fenced yd., 10 min. from Norair, 10% dn., $28,500. 213-323-4116. C

Trailer, 28′ Pacemaker, awning w/closed-in zipper sides, $600. 213-329-7218. C

Wheel Covers, wire spoke, 4 14″, $25. Box 1903. C

Surfboard, & racks, 9′ 2″ Joy Hanisaki, $70. Box 1904. C

Camera, 35 mm Exakta, single lens, reflex, $90. Box 1905. C

Tape Recorder, Pentron mod. HF 400, incl. microphone, $29. 213-675-0788, 10 a.m. to 2 p.m. C

Honda, 1967 305 Scrambler, 2,000 miles, $495. 805-498-3046. C

Boat, 1968 Glastron inbd.-outbd., all fiberglass, 120 h.p., many extras, $3,800. 213-451-0887. C

Home, 3-bdrm., 1¾ baths, f/place, cpts., b/wall, sprinklers, 2-car gar., screened-in patio, 5 min. to Norair, $27,900. 213-327-8289. C

Home, 5-bdrm., refrig. a/c, 3-car gar., undg. util., 600 sq. ft. covered patio, dps., near Northrop Ventura, $38,000. 213-889-8075. C

Seatbelts, 2 for Mustang, blue, $5. 213-788-9709. C

House Trailer, 35′ x 8′, 1-bdrm., 1962, $2,300. 213-673-5501. C

Guitar, Hagstrom, bass, w/amplifier, St. George, $175 or sell sep. 213-675-0191. C

Home, stucco, 3-bdrm. & den, 2 baths, patio, 2-car gar., cement block fence, cpts., $21,995. 213-671-8401. C

Record Player, Philco, stereo, maple cabinet, $100. 213-671-0018. C

Surfboard, Hawaii, 9′ 6″, $65. 213-375-6645. C

Doors, 10′ sliding glass, $75. 714-871-2046. C

Motorcycle, 1965 Honda, Super Hawk, extras, $325. 213-370-0250. C

House, 3-bdrm. & den, cpts., dps., 1½ baths, carport, 2½-car gar., rumpus rm., $27,500. 213-679-2771. C

Wanted to Buy

Rifle, 44-40, lever action, or 44-40 handgun. 213-323-4257. D

T-Bird, 1960 h/top, must be clean, low mileage. 805-482-6740. D

Model Airplane Engines, any Cox Medallion or Tee Dee & old model airplane kits. 213-377-6193. D

Edger, gas. 213-671-1012. D

Target Rifle, 22 cal. Remington, mod. 513 or better, for less than $50 & target scope. 213-671-0835. D

Marine Sextant, used, in good condition. Box 1906. D

Free (To Be Given Away)

Parakeet, green & yellow, young, w/bird cage. 213-454-4227. F

Pups, 5, 5 wks. old, male & female. 213-833-2707. F

Rentals Offered

Apt, 2-bdrm., unfurn., 1 child o.k., $130. 213-679-8035. G

Apt, 1-bdrm., unfurn., closed gar., near Northrop, $95. 213-756-0100. G

House, 2-bdrm., furn., Inglewood area, $150 mo. 213-823-1910, 213-823-5225. G

Apt, 1 & 2 bdrm., cpts., dps., bltins, all elect., closed gar., 5 min. to Nortronics PV, unfurn., $95 - $130; furn., $115 - $150. 213-375-9397, 213-375-2091. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

House, 3-bdrm., bltins, cpts., dps., 2 baths, f/place, fam. rm., dble. gar., Huntington Bch., $170 mo. 213-329-9464, 213-327-8994.

Apt, 1-bdrm., unfurn., 5 min. from Norair, bltin oven, pantry, closed gar., $140. 213-370-6018. G

Townhouse Deluxe, 4-bdrm., 2½ baths, cpts., dps., bltins, screened-in lanai & patio, pool, children & pets o.k., $250 mo. on lease or lease w/option to buy. 714-635-1686. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Apt, 2-bdrm., unfurn., cpts., dps., bltins, closed gar., pvt. patio, $125. 213-541-1226. G

House, 1-bdrm., unfurn., water & trash pd., $105 mo. 213-679-2121. G

Rides and Riders

Rides Wanted

6 a.m. — 3:42 p.m.

LaBrea & Centinela, Inglewood. Jerry St. John, Norair ext. 2632, 213-672-4749.

7 a.m. — 3:42 p.m.

Brookhurst St. & Cerritos St., Anaheim. Opal M. Stumbo, Norair ext. 1216, 714-535-7461.

8 a.m. — 4:45 p.m.

Brookhurst & Katella area, Anaheim or Garden Grove, Irvine. Robin S. Green, Norair ext. 1144, 714-833-0939.

Rentals Offered

Apt, near King Harbor, cpts., dps., bltins, gar. w/storage cabinets, 1-bdrm. $125; 3-bdrm., 2-baths, $180. 213-372-8835. G

Apt, 1-bdrm., cpts., ocean view, $75. 213-677-1310. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Exec. Apt, 2-bdrm., 2 baths, 1,450 sq. ft., in Inglewood, $195 mo. 213-670-6084. G

Rentals Wanted

Apt, or Duplex, 2-bdrm., cpts., have 8 yr. old dog & 6 months old baby, $110 mo. or under. 213-329-9303. H

Garage, for storage, Hawthorne area. 213-375-9946. H

House or apt., 1 or 2 bdrm., preferably near Plant Three, before Oct. 1. 213-477-0167. H

House, 2 or 3-bdrm., unfurn. 213-376-4787. H

Child Care

Child Care Offered, in Torrance area, in my home, during day. 213-320-4039. I

Child Care offered, days, my home, references. 714-774-4222. I

Lost

Dog, small, black, curly-haired, answers to name Oggie, near LaBrea & Manchester, Inglewood, on Sept. 5, approx. 5 p.m., reward. 213-677-3689. J

Personals

I wish to thank my many friends at Northrop for their consideration during my recent illness. R. D. TOOLEY. L

We wish to express our sincerest thanks & appreciation for the kindness extended to us by friends at Northrop, during our recent sorrow. VIRGINIA DUDLEY & FAMILY. L

Working Girl wanted to share my home, lge. bdrm., kitchen privileges, in Garden Grove. 714-539-0339. L

My sincere thanks to all my Northrop friends for their many cards & kindness at the recent loss of my mother. KEN PAYNE. L

We wish to express our sincere thanks to our friends for their kindness & expressions of sympathy in the death of Dennis A. Davis, our son & brother. MR. & MRS. RALPH A. DAVIS & FAMILY. L

I wish to thank all of our friends at Northrop for their kindness at the time of Ray's death. MRS. RAY WALSH. L

For Sale or Trade

Corvair, 1963, stick, new tires & paint, $475 or trade for motorcycle. 213-645-7715. M

Motorcycle, 1965 Yamaha YD53, $375 or trade for small import car. 213-839-7963, 213-394-7547. M

Motorcycle, 1965 Honda Scrambler 160, $275 or trade for smaller cycle. 213-328-7048. M

TV, 23″, color, console, $200 or trade for station wagon, 1962 Ford, or 1961 Ford 292 eng. in good condition. 213-255-6625. M

Truckster, 1960 Cushman, $150 or trade for good utility trailer. 714-535-3723. M

Dunebuggy, on 1962 V.W., fiberglass, big tires, $1,300 or trade for V.W. 213-676-6893. M

DOD Increases Carolina Order

Northrop Carolina, Inc., has received notification of a $1,804,000 addition to an existing Department of Defense contract for the production of armament.

The new order requires the addition of more than 400,000 units to the original contract and will double the planned production rate when units start coming off production lines at the firm's Bee Tree Plant this fall.

DISNEYLAND NIGHT TICKETS ON SALE

Northrop personnel may still obtain tickets at all Personnel Activities outlets for the special October 18 Army of the United States Association night at Disneyland.

The price is $3.75 and includes admission and unlimited use of all facilities, except shooting galleries, from 8 p.m. to 1 a.m.

CAREN REICHARDT

Electronic Engineer Is a Charmer

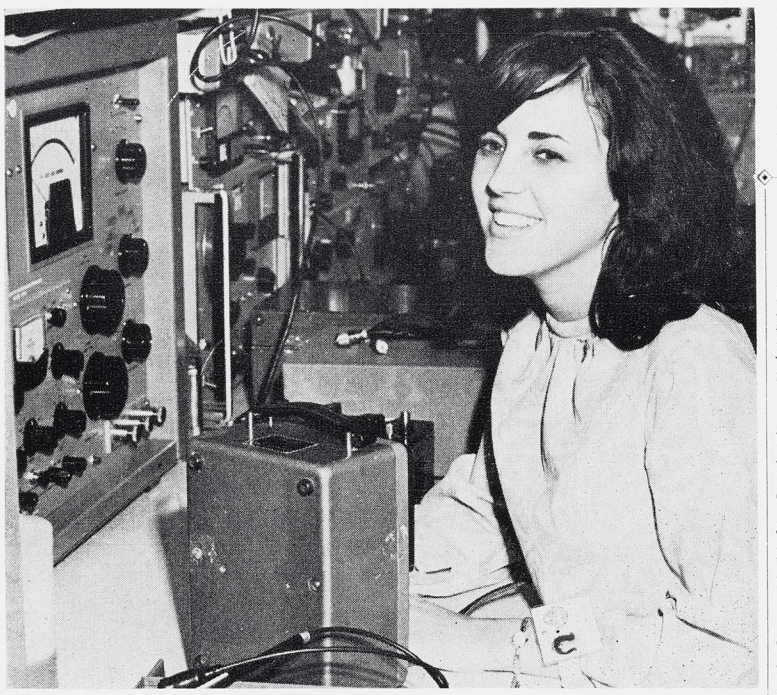
A 22-year-old graduate of Northrop Institute of Technology is the youngest female electronic engineer working at Nortronics.

She's Caren Reichardt, an engineer in Hawthorne's Standards and Calibration Laboratory. Since coming to Nortronics last July 8, Miss Reichardt has been "troubleshooting" to learn the products and equipment. Following this phase, she will be assigned the task of developing new calibration techniques and procedures.

She attended NIT on a four-year scholarship and received a B.S. degree in electronic engineering in March. Miss Reichardt has spent her summers working as an electrical draftsman with local companies. She finished in the upper one-fourth of her class.

When she was in the eighth grade, Miss Reichardt wrote an essay saying that she would like to become a nuclear physicist or work in biotechnology. "I'm really amazed now to see that it's turning out that way," she said.

Her immediate goal is to expand her B.S. degree into a master's in medical engineering through the University of California at Los Angeles night extension courses which she is now attending. "I want to add to my personal knowledge," remarked Miss Reichardt, "and do something for the betterment of mankind."



NORTRONICS' NEWEST electronic engineer is Caren Reichardt of Hawthorne's Standards and Calibration Laboratory. Miss Reichardt has her B.S. degree in engineering and is seeking her master's in medical engineering through UCLA night extension courses.

OMEGA

(Continued from page 1)

pleted, another line of OMEGA products will be established to join the military and commercial shipboard versions.

Ultimately, eight OMEGA transmitting stations will be strategically located in different parts of the world to provide a navigating accuracy of within one mile in daytime and two miles at night.

Stations already exist at Forestport, New York; Haiku, Hawaii; Port-of-Spain, Trinidad; and Bratland, Norway. Other likely locations include the Indian Ocean, Southern South America, the Western Pacific, and the Australia/New Zealand area.

Mr. Cavarella

Mr. Demetry

Mrs. Dixon

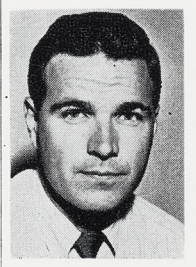
Mrs. Dupuis

Mrs. Farrance

Mrs. Goldstein

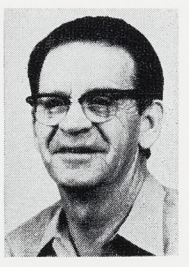
Mrs. McLaughlin

Mr. Musuraca

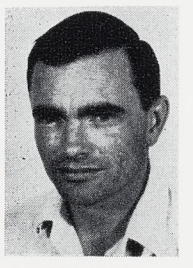


Mr. Nowell

Mrs. Riley

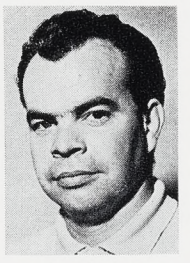


Mr. Simpson



Mr. Smith

Mrs. Thompson



Mr. Wilson

Mr. Youngman

More Big Nickel winners are these Navigation department employees who have made significant cost reduction suggestions on the C-5 program. The Big Nickel awards will continue to be presented to those who contribute C-5 money saving ideas. A Big Nickel is a nickel that by "ingenuity, care, thoughtfulness, and the application of professional ability is made to do the work of a dollar."

Northrop Men Play in Tennis Championships

Four Norair employees and two from Nortronics have participated in the 42nd annual National Public Parks Tennis Championships in Los Angeles, according to Hollis Smith, Nortronics engineering specialist and treasurer of the Los Angeles Municipal Tennis Association.

Norair participants included William Lurie, Cost Estimating, who participated in the senior singles and reached the quarter finals; John Potts, Project Budgets, senior singles; Joe Ford, Systems Reliability, open singles and open doubles; and Malcolm Potts, Reproduction, teamed in the open doubles with Mr. Ford.

Nortronics' two players were Ed Horgan, Control Electronics, open singles and open doubles; and Hollis Smith, Radio Navigation, open singles and teamed in the open doubles with Mr. Horgan.

BLOODMOBILE

Volunteer blood donors from first and second shift operations within Northrop's Hawthorne complex gave 295 pints of blood September 4 during a fall blood bank.

Adding 62 pints collected earlier at Santa Fe, the fall bloodmobile visit accounted for 357 pints. The second shift, especially from the Mariposa Facility, helped put donations over the top, according to Welfare Administrator Marie Tully.

The next scheduled bloodmobile visit will be December 4.

Blood donated by volunteers is available to employees and their families without charge.

THE SAFETY SHOE mobile unit visited Anaheim this month with new models of safety oxfords for men and women shown by Larry Arroues (left), of the Industrial Safety Shoe Company. Al Foote, Alva Kook and Josephine Betschman (right), consider styles. The mobile unit visits Anaheim on a quarterly basis.

SEALAB

(Continued from page 1)

sule below. The vans will, at all times, maintain voice and picture contact with the aquanaut teams.

The SEALAB will leave San Francisco the end of September and be shipped to the Long Beach Naval Shipyards to take on food, medical supplies and other provisions. Meanwhile, the Northrop-equipped vans will be transported directly to San Clemente Island on board the Elk River, a modified LSMR, from which they will operate during further system integrated testing and during the October dive.

TIME TO MAIL GIFTS OVERSEAS

It's not too soon to start thinking of Christmas. Especially if you have family members or friends serving overseas.

The Department of Defense and the Post Office Department have announced the suggested dates for mailing Christmas cards and packages to locations abroad so that they will arrive for delivery on or before Christmas Day.

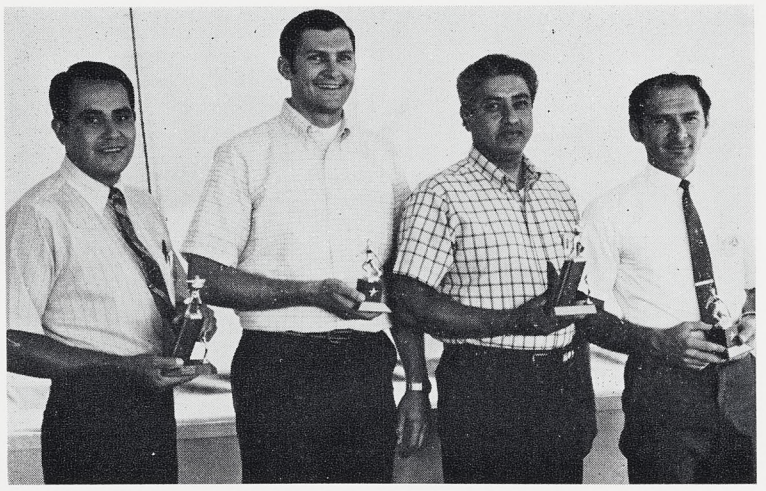
Surface mail should be sent between October 14 and November 9. Space available mail (SAM) must move October 21 to November 23. Parcel Air Lift (PAL) should go between October 28 and November 30. Air mail can wait until November 30, but should be sent not later than December 11.

By using the SAM and PAL services, senders can save in the cost of shipping packages. Parcels should be wrapped securely and addressed correctly, using the proper APO or FPO numbers.

'HARVEST OF GEMS' OPENS OCTOBER 19

Northrop families planning to take part in Family Day activities October 20 are being extended a special invitation to drop by at the NRC Gem and Mineral Club's "Harvest of Gems" show at Hawthorne Memorial Center, at the corner of El Segundo and Prairie.

This ninth annual lapidary extravaganza is free.



SLO-PITCH SOFTBALL champs at Anaheim received trophies at the conclusion of 12-inch and 16-inch play last month. From left, they are Al Cruz, Tooling co-captain; Gary Smith, Jesters manager; Frank Rangel, Tooling manager; and Jim Nelatti, Tooling co-captain.

Complete Program Scheduled for Nortronics Family Day

NORTHROP NEWS

NORTRONICS EDITION

Northrop Corporation, Beverly Hills, California Vol. 26, No. 20 October 9, 1968

Service Pins Will Honor 16 Veterans

Two Nortronics employees will be awarded 25-year pins this month, another will be recognized for 20 years of service and 13 others have completed 15 years with Northrop.

Newt Cook is now employed in Assembly Bonding and Mock-up at Northrop Systems Laboratories. But, 25 years ago, Mr. Cook was first employed as an assembler on Northrop's P-61 "Black Widow" Night Fighter.

Also on the P-61 line at that time was Karl Prumers who performed instrument checkout. Mr. Prumers is now a senior technician in the Standards and Calibration Laboratory in Hawthorne.

Robert Ashley of the Electronics Development unit at Hawthorne will receive his 20-year award this month.

Fifteen-year recognitions will be presented to employees at the following locations:

Hawthorne: Dan Casson, Albert Christensen, Charles Fuller, Leroy Kaufold, Lawrence Pritchard, Willis Stroub, jr., and William Webster.

Mr. Cook

Mr. Prumers

Anaheim: Chester Maris, Robert Varner and Tommy Runels.

Palos Verdes: Ronald Brooks, Mildred Russell and Anis Schofield.

Management Club Sets Dinner Dance

The fourth annual dinner dance of the Nortronics Management Club has been scheduled for November 9, according to Al Blythe, club vice president.

The setting for the event will be the Biltmore Bowl in Los Angeles.

The full evening of activities include a complete gourmet dinner; dancing to Matty Malneck's Orchestra; a floor show featuring a singer, comedian and novelty act; numerous door prizes; and free champagne at every table.

Admission is $6 per person by advanced reservation only. Reservation forms will be in the mail soon to all Management Club members.

TICKETS AVAILABLE

Final call for tickets to the Army of the United States Association Night at Disneyland, October 18, was issued this week by NRC.

Tickets, available at Personnel Activities outlets, sell for $3.75 per person and are good for admission and unlimited use of facilities from 8 p.m. to 1 a.m.

FAMILY DAY is less than two weeks away as the sign indicates. Jack Kinzer, foreman of Buildings and Grounds, gives Norma Schrumpf, Security secretary, some pointers about hammering as he puts the final nails into the Family Day reminder on the roof of the Anaheim guard shack.

Largest, Fastest Jetliner Makes Impressive Debut

Amid all the fanfare and ceremony expected for the debut of the world's largest and fastest jetliner, the first Boeing 747 superjet rolled off the assembly lines at Everett, Washington, September 30.

As impressive as the huge jet itself was the fact the first 747 rollout occurred one day ahead of a manufacturing schedule set for it more than two and a half years ago, in April 1966.

Maiden flight for the initial 747 is now set for December 17, the 65th anniversary of the Wright Brother's first powered flight at Kitty Hawk, North Carolina.

(See photos, page 4)

A crowd of several thousand persons, including airline executives, government officials, 747 program suppliers, news media representatives and select Boeing employees attended rollout ceremonies.

Those representing Northrop Corporation, a major contributor to the Boeing 747 Program, included Thomas V. Jones, president and chairman, F. W. Lloyd, vice president and Norair general manager, Welko Gasich, vice president and Ventura general manager, and L. H. Brennwald, Norair vice president and 747 Program manager.

The main address was delivered by C. R. Smith, United States Secretary of Commerce. He said, "The 747 will provide a standard of comfort and convenience never equalled before. It will make a new contribution to the prestige of United States aviation. Sales of the 747 will contribute to our international balance of trade, and strengthen our balance of payments. Already, 747's to a value of $1.5 billion have been contracted to foreign airlines. More will be sold."

The first 747 sported vast areas of gleaming silver aluminum topped by a white upper fuselage. A red speed stripe runs the length

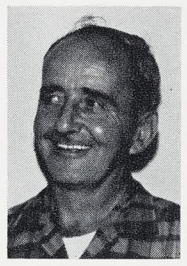
(See 747, page 6)

Charles Jameson Latest Recipient Of Golden Shoe

A senior saw operator at Nortronics is Northrop's newest member of the Golden Shoe Club.

Charles Jameson, of Sheet Metal and Welding at Anaheim, received his Golden Shoe award following a recent mishap involving his right foot.

Mr. Jameson and another employee were trying to close a steel warehouse door, one pulling and the other pushing when, suddenly, the door moved forward. Its sharp bottom edge struck Mr. Jameson's right shoe, cutting through the leather but failing to penetrate the protective steel safety cap.



Mr. Jameson

Because he was wearing safety shoes, Mr. Jameson suffered only a slight bruise to a toe on his right foot rather than a more serious injury, according to A. L. Van Der Most, Nortronics Safety administrator.

Mr. Jameson is the second employee to become a member of the Golden Shoe Club since Nortronics began participating in 1967. Membership is comprised of industrial workers who have escaped serious foot injury because they wore safety shoes.

Employees May Escort Families to Work Areas

A personal invitation has been extended by Frederick Stevens, vice president and Nortronics general manager, to all employees and their families to take part in Nortronics' Family Day activities on October 20.

Plans for the day are nearing completion, according to Bill Burch, chief of Employee Relations, who is coordinating all arrangements.

The event will mark the first opportunity in two years for families and friends of Nortronics employees to visit Nortronics facilities.

Guests will be welcomed anytime between noon and 3 p.m. More than 10,000 are expected to attend.

Each employee will have the opportunity personally to escort his family to work areas throughout the division. Hosts will be on hand at all displays to answer questions.

Norair's 747, F-5 and T-38 production lines will also be observing Family Day between noon and 4 p.m.

Outdoor refreshment centers will provide free coffee, punch and cookies at all locations. Anaheim will serve visitors from the sheltered recreation area behind the cafeteria, Palos Verdes will set up their booth adjacent to the northwest corner of Building Six and the east parking lot will be utilized for refreshments at the Johnson Facility in Hawthorne.

In addition to refreshments, ballpoint pens commemorating the day, will be given to all guests, plus some special surprises for the children.

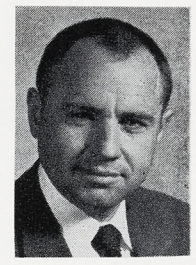
Among the areas that Anaheim will feature will be its stringer production facility in Y-12, the Polaris/Poseidon Support Depot and the TEAMS equipment area in Y-1, and a Hawk loader and launcher display in the parking lot near the refreshment area.

Palos Verdes will provide an operational VIGICON demonstration in Building Five, DSSP, Electro-optical, Information Systems and administrative groups will have organizational displays

(See FAMILY DAY, page 6)

Fred Stevens Named Chairman Of '69 WINCON

Frederick Stevens, vice president and Nortronics general manager, has been named general chairman of the 1969 Winter Convention on Aerospace and Electronics Systems (WINCON) meeting on February 11, 12 and 13 in Los Angeles.



Mr. Stevens

The tenth annual conference is designed to provide top aerospace, education and government managers a forum for exchange of ideas on current technical developments, problems and solutions in the areas of research and development.

Nationally prominent industry leaders will chair technical sessions sponsored by the Aerospace and Electronic Systems Group and the Los Angeles Council of the Institute of Electrical and Electronic Engineers.

Another Nortronics man named to the WINCON planning committee is Lloyd Jensen, who will serve as assistant to the general chairman. He is assistant director of Marketing at Palos Verdes.

Mr. Stevens, prominent in the field of inertial guidance and engineering management, came to Northrop in 1947 and was one of the inventors of America's first successful intercontinental missile guidance systems, the Mark I for the Snark missile.

Winning Suggestions Bring Cash for Employees' Ideas

A Nortronics general machinist has received six separate checks totaling $452 in the Suggestion Awards Program, according to Administrator Larry King.

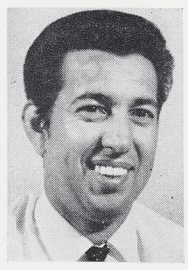
In addition, three persons have been awarded more than $100 each and 21 others received amounts ranging from $10 to $90.

Al Blanco of Hawthorne's Fabrication Services unit received all six awards this month. His highest one was for $387 for suggesting the use of a new tool for lapping air sweep gages.

The largest single award, $442, went to Tony Amundson of Environmental Engineering at Hawthorne. Mr. Amundson suggested the use of a protective shield for computer test seals. Also in Hawthorne, Leta Rye collected $133 for her suggestion of a revised technique for numbering a wire list for ground support equipment.

At Palos Verdes, Edwin Smith of the Maintenance department received $103 as the second of two awards for suggesting the revision of heating system controls at Palos Verdes.

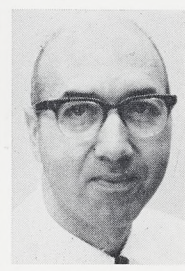
Other suggesters in the $10 to $90 category were, in Anaheim, Donald Allis, Walter Brown, Archie Buchanan, Jack Burton, Mary Jo Butler (2), Rosemary Caffey, Richard Glover, Pearl Hill, Mary Ann Jeffries, Jean Keenum, Rene Laflamme, James Miles (2), Richard Miller, Ronald Moniz, Richard Packer, W. R. Pittman and Kenneth Stillings; and in Hawthorne, L. S. Gaudette, W. T. Pryor, R. H. Youngman.



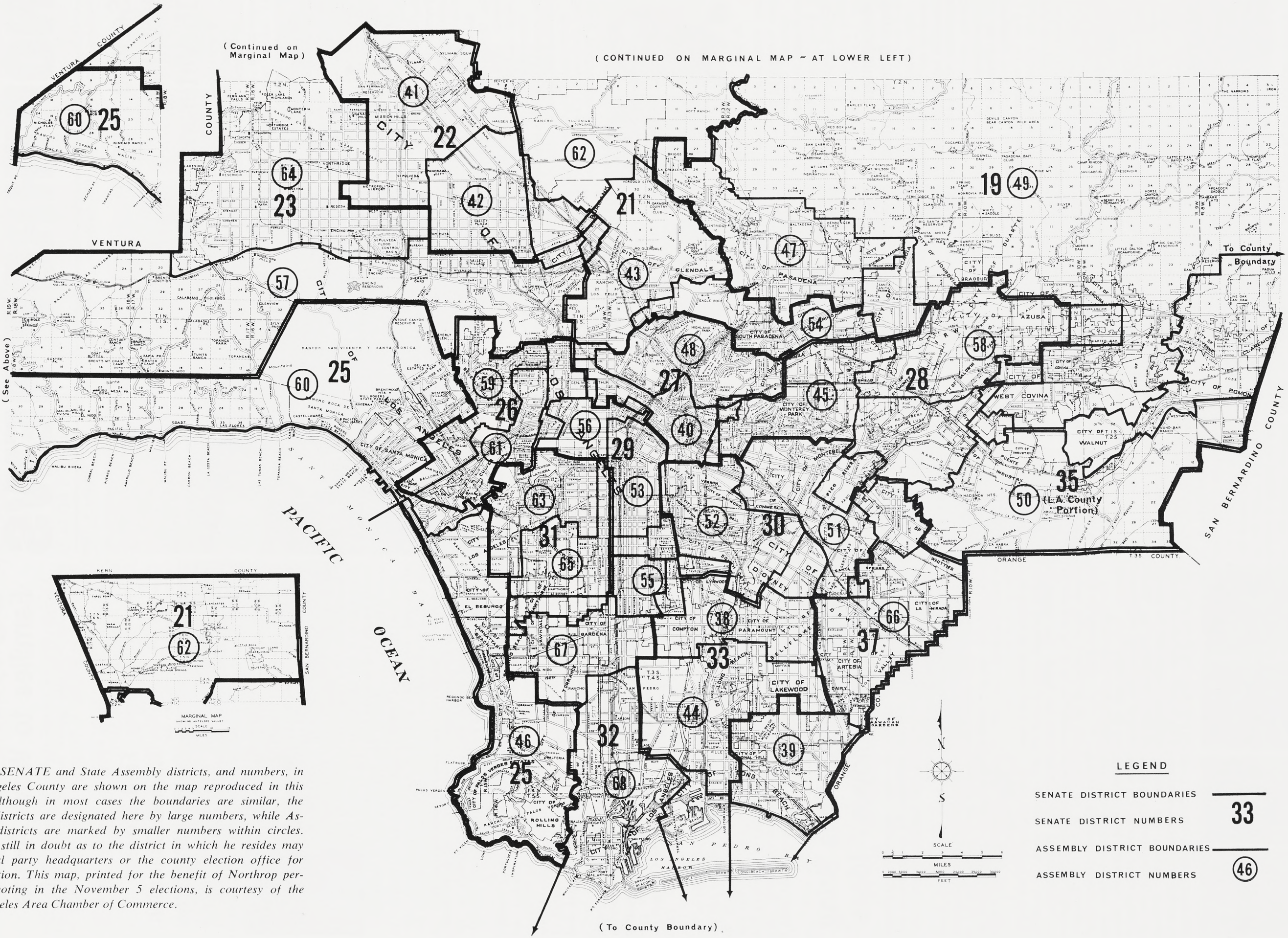
Mr. Blanco

Mr. Amundson

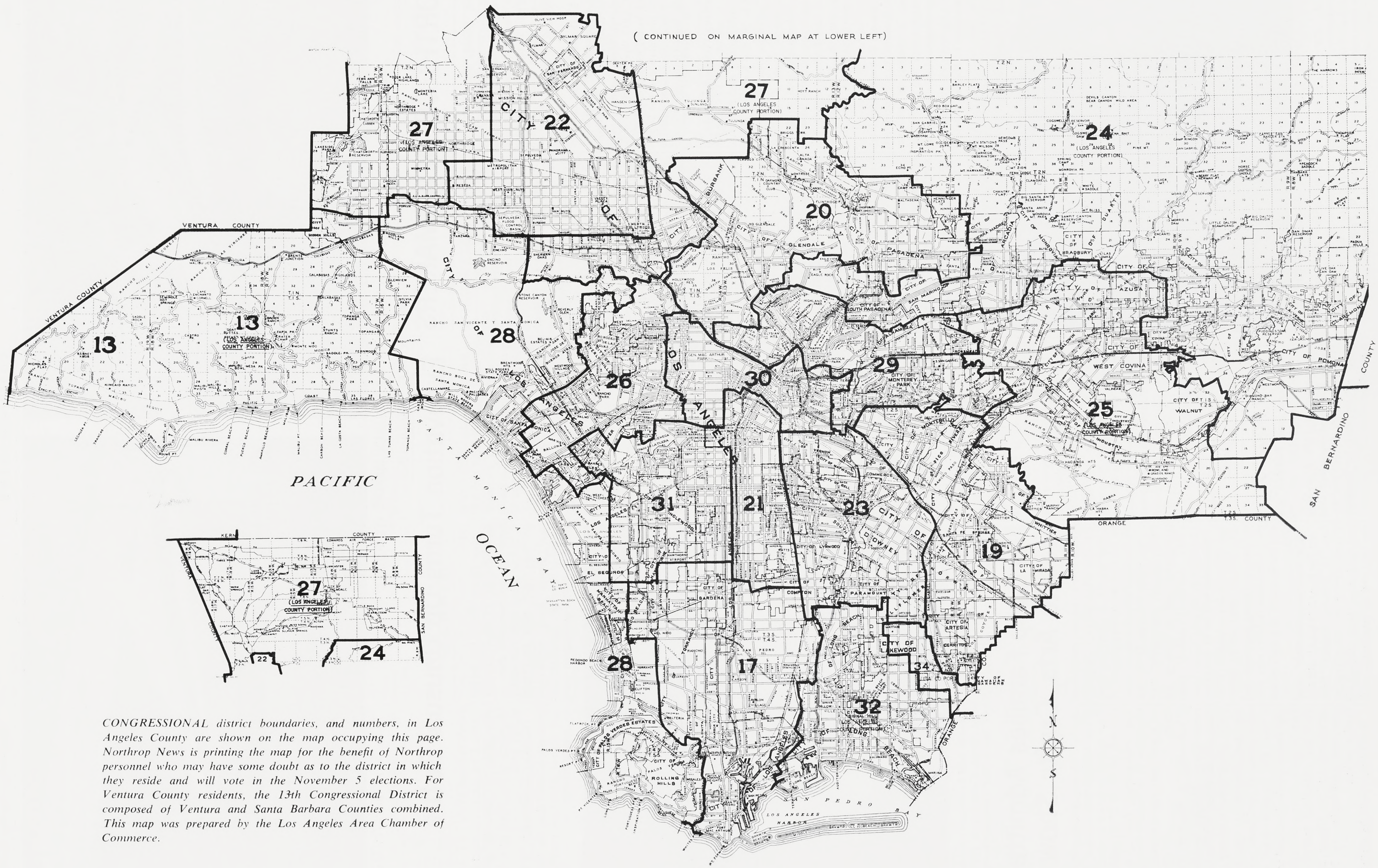
Miss Rye



Mr. Smith



STATE SENATE and State Assembly districts, and numbers, in Los Angeles County are shown on the map reproduced in this page. Although in most cases the boundaries are similar, the Senate districts are designated here by large numbers, while Assembly districts are marked by smaller numbers within circles. Anyone still in doubt as to the district in which he resides may call local party headquarters or the county election office for clarification. This map, printed for the benefit of Northrop personnel voting in the November 5 elections, is courtesy of the Los Angeles Area Chamber of Commerce.


(CONTINUED ON MARGINAL MAP AT LOWER LEFT)
VENTURA COUNTY
PACIFIC
OCEAN
LOS ANGELES
SAN BERNARDINO COUNTY
ORANGE
13
(LOS ANGELES COUNTY PORTION)
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(LOS ANGELES COUNTY PORTION)
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(LOS ANGELES COUNTY PORTION)
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(LOS ANGELES COUNTY PORTION)
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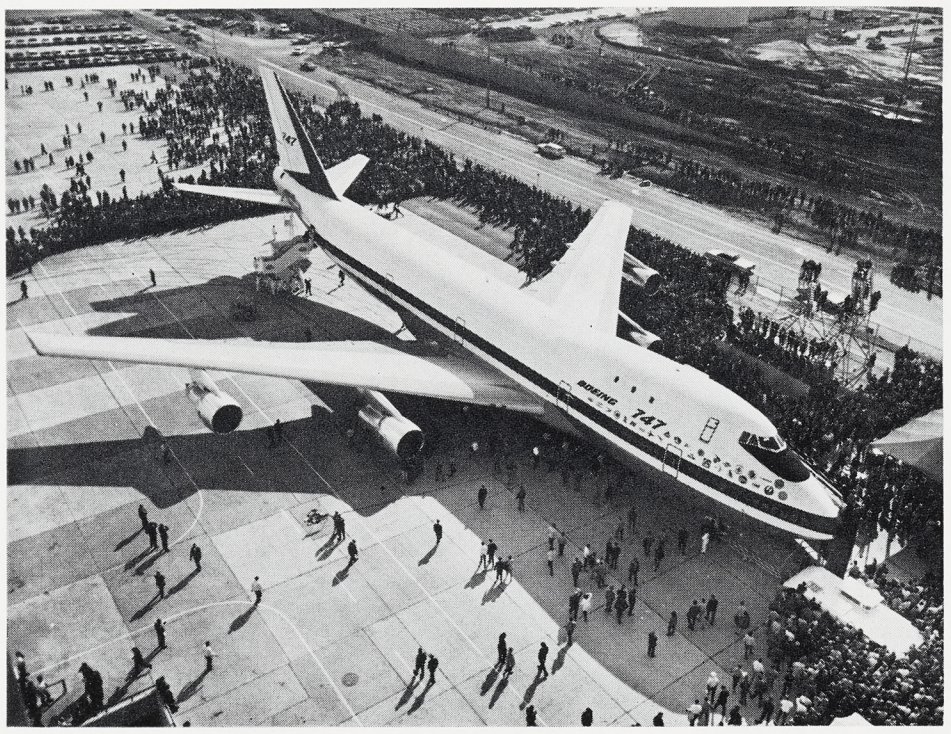
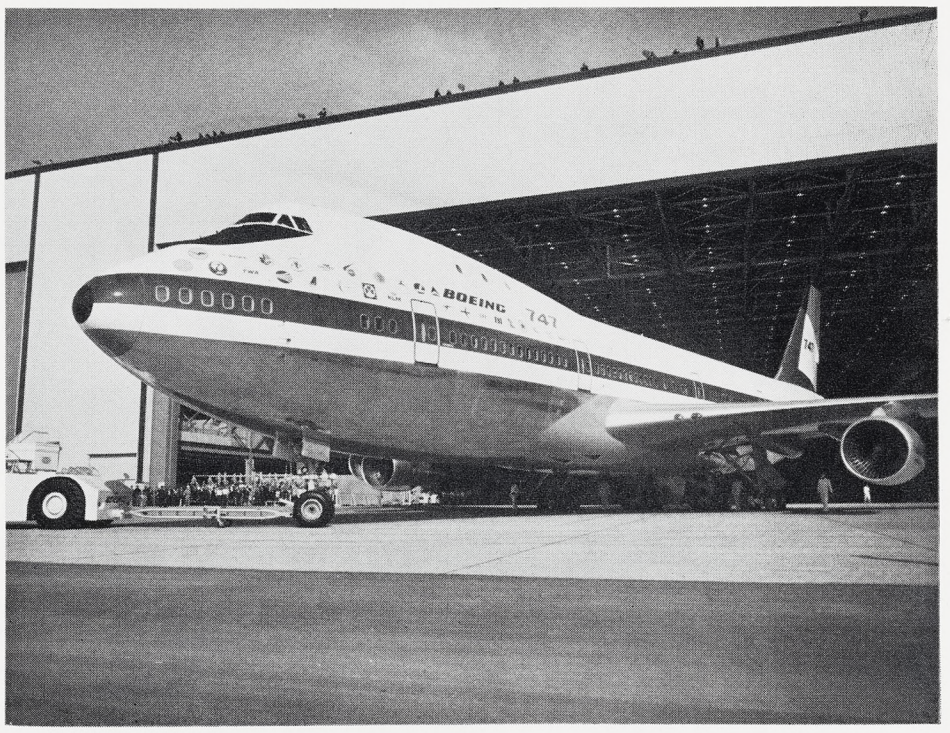
CITY OF SAN FERNANDO
CITY OF GLENDALE
CITY OF PASADENA
CITY OF SOUTH PASADENA
CITY OF MONTEREY PARK
CITY OF ALHAMBRA
CITY OF SAN MARINO
CITY OF ARCADIA
CITY OF MONROVIA
CITY OF DUARTE
CITY OF BRADBURY
CITY OF AZUSA
CITY OF COVINA
CITY OF WEST COVINA
CITY OF POMONA
CITY OF CLAREMONT
CITY OF WALNUT
CITY OF INDUSTRY
CITY OF LA MIRADA
CITY OF BURBANK
CITY OF DOWNEY
CITY OF LYNWOOD
CITY OF COMPTON
CITY OF PARAMOUNT
CITY OF ARTESIA
CITY OF LAKEWOOD
CITY OF HAWAIIAN GARDENS
CITY OF LONG BEACH
CITY OF SANTA MONICA
CITY OF EL SEGUNDO
CITY OF TORRANCE
CITY OF GARDENA
CITY OF HAWTHORNE
CITY OF INGLEWOOD
CITY OF LOS ANGELES
CITY OF CULVER
CITY OF PALOS VERDES ESTATES
CITY OF ROLLING HILLS
CITY OF LOMITA
CITY OF SANTA FE SPRINGS
CITY OF WHITTIER
CITY OF COMMERCE
CITY OF MONTEBELLO
CITY OF BELL
CITY OF HUNTINGTON PARK
CITY OF SOUTH GATE
CITY OF LYNWOOD
CITY OF BELL GARDENS
CITY OF CUDAHY
CITY OF MAYWOOD
CITY OF VERNON
CITY OF SIGNAL HILL
CITY OF CARSON
CITY OF DOMINGUEZ
CITY OF WILMINGTON
CITY OF SAN PEDRO
CITY OF PORT HUENEME
CITY OF OXNARD
CITY OF SAN BUENAVENTURA
CITY OF SANTA BARBARA
CITY OF GOLETA
CITY OF LOMPOC
CITY OF SANTA MARIA
CITY OF GUADALUPE
CITY OF SOLVANG
CITY OF BUELLTON
CITY OF SANTA YNEZ
CITY OF LOS ALAMOS
CITY OF SAN LUIS OBISPO
CITY OF ARROYO GRANDE
CITY OF GROVER BEACH
CITY OF PISMO BEACH
CITY OF MORRO BAY
CITY OF CAYUCOS
CITY OF PASO ROBLES
CITY OF ATASCADERO
CITY OF SAN MIGUEL
CITY OF PARKFIELD
CITY OF COALINGA
CITY OF HURON
CITY OF AVENAL
CITY OF KETTLEMAN CITY
CITY OF LEMOORE
CITY OF HANFORD
CITY OF CORCORAN
CITY OF KINGS
CITY OF TULARE
CITY OF DINUBA
CITY OF SELMA
CITY OF KINGSBURG
CITY OF REEDLEY
CITY OF SANGER
CITY OF FRESNO
CITY OF CLOVIS
CITY OF FIREBAUGH
CITY OF MENDOTA
CITY OF SAN JOAQUIN
CITY OF HUNTINGTON BEACH
CITY OF FOUNTAIN VALLEY
CITY OF SEAL BEACH
CITY OF STANTON
CITY OF GARDEN GROVE
CITY OF WESTMINSTER
CITY OF SANTA ANA
CITY OF TUSTIN
CITY OF ORANGE
CITY OF VILLA PARK
CITY OF LOS ALAMITOS
CITY OF CYPRESS
CITY OF LA PALMA
CITY OF BUENA PARK
CITY OF ANAHEIM
CITY OF PLACENTIA
CITY OF BREA
CITY OF FULLERTON
CITY OF YORBA LINDA
CITY OF BRISTOL
CITY OF CHINO
CITY OF ONTARIO
CITY OF UPLAND
CITY OF RANCHO CUCAMONGA
CITY OF RIALTO
CITY OF COLTON
CITY OF SAN BERNARDINO
CITY OF REDLANDS
CITY OF LOMA LINDA
CITY OF HIGHLAND
CITY OF RIVERSIDE
CITY OF CORONA
CITY OF NORCO
CITY OF MORENO
CITY OF PERRIS
CITY OF HEMET
CITY OF SAN JACINTO
CITY OF BANNING
CITY OF BEAUMONT
CITY OF CALIMESA
CITY OF INDIO
CITY OF COACHELLA
CITY OF CALEXICO
CITY OF EL CENTRO
CITY OF BRAWLEY
CITY OF IMPERIAL
CITY OF HOLTVILLE
CITY OF CALIPATRIA
CITY OF WESTMORLAND
CITY OF NEEDLES
CITY OF BARSTOW
CITY OF VICTORVILLE
CITY OF HESPERIA
CITY OF APPLE VALLEY
CITY OF BIG BEAR LAKE
CITY OF BIG BEAR CITY
CITY OF YUCAIPA
CITY OF CALIMESA
CITY OF BANNING
CITY OF BEAUMONT
CITY OF PALM SPRINGS
CITY OF CATHEDRAL CITY
CITY OF RANCHO MIRAGE
CITY OF PALM DESERT
CITY OF INDIAN WELLS
CITY OF LA QUINTA
CITY OF INDIO
CITY OF COACHELLA
CITY OF BLYTHE





SPECTACULAR BOEING 747 JETLINER MAKING ITS PUBLIC DEBUT *Photos by The Boeing Company*

NORTHROP NEWSMAKERS

Greg Young, son of **W. H. Young,** Northrop Corporate Laboratories, was one of nine Boy Scouts among approximately 250 taking part in the annual summer camp at Catalina Island to earn the "Rugged E" award.

* * *

G. L. Danek, Norair, has presented a paper titled "Correlation of Longitudinal Force Data From a Transonic Wind Tunnel Test of an AGARD Model C in the Norair 2x2-foot Trisonic Wind Tunnel" for presentation at the Supersonic Tunnel Association meeting at Ohio State University.

* * *

Northrop President Thomas V. Jones is one of four Los Angeles area businessmen elected board members of the National Industrial Conference Board.

The board, founded in 1916, is an independent and nonprofit institution for business and industrial fact finding through scientific research. Mr. Jones will serve a two-year term.

* * *

Dr. Harold R. Luxenberg, Nortronics consultant in Information Systems, is conducting two evening classes this fall in Display Systems Engineering.

Dr. Luxenberg, in conjunction with **Rudolph L. Kuehn,** is teaching the three-hour course Wednesday nights at the University of California, Irvine, and Thursday nights at the University of California at Los Angeles.

The instruction began last week and will continue for 12 weeks.

* * *

W. J. Franks and J. W. Headley, Norair, have prepared an article titled "Axially Symmetric Bodies Having a Minimum Pressure Variation With Mach Number" for publication in the AIAA Journal.

* * *

L. H. Walton, Northrop program director for the Venice Facility, will participate as a panelist discussing "Hard Core Unemployment" at the 50th annual meeting of the California Manufacturing Association October 17-18 in Beverly Hills.

* * *

D. C. Atmur, Norair, has made an informal presentation on "Evaluation of the S/N Fatigue Life Gage" before Committee E-9 of the ASTM in a conference at Atlanta, Georgia.

* * *

Paul Lawrason, Ventura, has been accepted as the Northrop Corporation attendee at the forthcoming Defense Weapons Systems Management course given by the Air Force Institute of Technology, Department of the Air Force.

Ed Burd will assume the duties as program director for propeller drones during Mr. Lawrason's absence.

SENATOR EDWARD W. BROOKE (center), accepts a model of the GR-G5 subminiature rate gyroscope engineered and manufactured by the employees of Nortronics' Precision Products department from Frederick Stevens (left), vice president and Nortronics general manager, and David N. Ferguson, vice president and manager of the Precision Products department.

'COKE,' CIRCA 1925

Excavation Turns Up Unusual Bottle

Back in the days before retail evolution brought about the nonreturnable bottle and the easy-open, all-aluminum can, someone drank a bottle of Coca-Cola in the backyard of a Torrance home.

The bottle, quite different from today's Coca-Cola containers, was left by a garage, where it became buried. It wasn't unearthed until recently, when a Northrop Norair courier found it while gardening.

Midge Flint, a Northrop employee for 12 years, was digging near the garage preparatory to installing flower beds, when she found the bottle.

"I had never seen a bottle like this one," Miss Flint said. "The glass is clear, sort of bumpy, and has a profile of an Indian chief on it."

By the Indian figure are the words, "Big Chief," and the inscription, "Property of the Coca-Cola Bottling Company, Santa Maria, California, December 29, 1925."

Miss Flint's family has owned the home for 35 years, and the house was not new even then.

"I was doing some remodeling not long ago," Miss Flint said, "and found some newspapers stuffed in the walls, apparently for insulation." The newspapers were from 1911 and 1912.

Miss Flint plans to contact antique dealers to determine possible worth of the bottle as a collector's item.

One thing seems certain. It has to be worth more than the three-cent deposit refund she could get for it in a market.

INSCRIPTION on this Coca-Cola bottle held by Norair's Midge Flint indicates it originated in Santa Maria, California in 1925. Miss Flint unearthed it in a flower bed at her Torrance home.

Page Selected For Another Southland Job

Page Communications Engineers, Inc., a Northrop subsidiary, has received a $69,000 contract to engineer, furnish and install a microwave system linking Southern California Edison Company power substations at Eagle Rock and Gould.

The system will carry one-way closed circuit traffic utilizing a remote-control camera to allow operators at one site to monitor work at the other site. Scheduled operation date is March 1969.

Southern California Edison supplies electricity to central and southern California and central Nevada, covering a population area of approximately seven million persons. It operates one nuclear, 13 thermal and 37 hydroelectric generating plants.

NEW ADDRESS

The Republican Party's County Central Committee office is now located at 1326 West Sixth Street, Los Angeles, rather than 315 West Ninth Street, Los Angeles, as reported in Northrop News September 25.

Northrop Families Admitted Free to Arts, Crafts Show

One of the largest invitational arts and crafts shows in Southern California will, for the third time, be held on the hilltop grounds of Nortronics Palos Verdes.

The event, sponsored by the Palos Verdes Community Arts Association, will be open to the public, October 12 and 13, from 11 a.m. to 6 p.m.

Admission will be $1 for adults and 50 cents for teenagers. Children 12 and under will be admitted free. Northrop employees and their immediate families may present their badge for free admission.

The sixth annual exhibit, called "Art For Fun(d)'s Sake," will feature an auction Sunday, from 2 p.m. till 6 p.m., noted artisans and craftsmen from throughout the state and an appearance each day by orchestra leader, composer and lecturer, Stan Kenton. Mr. Kenton will conduct a specially selected group of 25-30 amateur and professional Palos Verdes musicians in a concert Saturday, at 3 p.m. and again Sunday, at noon.

According to Mrs. H. Lawrence Bayer, PVCAA president, there will be about 30 prominent artists at the show, including potters and silversmiths, who have been invited to participate.

"Art For Fun(d)'s Sake" will also feature professional and amateur puppet shows throughout each day, a boutique, folk dances performed by The Gandy Dancers and participation by Nortronics artists.

Refreshments will be available.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Pickup, 1967 Dodge, 8′ bed w/custom tarp, custom cab, a/c, r/h, std. shift, 6-cyl., $1,850. 213-644-3007. A

Chevrolet, 1956, Bel Air, r/h, auto., $300. 213-674-6409. A

Chevrolet, 1959 Impala, eng. & trans. o/hauled, $450. 213-532-6109. A

Pontiac, 1964 Bonneville convt., all power, $1,095. 213-545-4015. A

Dodge, 1960 4-dr., Phoenix, $295. 213-754-8092. A

Mustang, 1967 2+2, 289 V-8, p/s, a/c, AM-FM radio, $2,200. 213-679-2039. A

Chevrolet, 1963 Nova SS, $1,000. 213-371-1167. A

Fiat, 1961 1100/103D, wrecked body, dune buggy foundation, $150. 213-941-1865. A

T-Bird, 1967, cpe., 2-dr., full power, a/c, $3,500. 213-377-5947. A

Station Wagon, 1959 Ford, $75. 213-325-6022, 213-325-2613. A

T-Bird, 1959, 2-dr. h/top, $600. 213-675-8876. A

Station Wagon, 1964 Pontiac Tempest, 4-dr., fact. air, radio, $1,000. 213-324-1984. A

Ford, 1959 Fairlane 500, $100. 213-679-0835.

Chevrolet, 1960 Impala convt., V-8, r/h, p/b, p/s, auto. trans., $470. 213-378-3255. A

Pickup, 1960 Chev., ¾-ton, $600. 213-676-6021. A

Comet, 1960 4-dr., $175. 213-377-3582. A

Oldsmobile, 1962 Starfire, r/h, p/s, p/b, tach., $850. 213-644-6718. A

Karmann Ghia, 1965, new paint, $1,500. 213-429-2130. A

Pontiac, 1965 LeMans, 2-dr., 326 cu. in., 3-spd., $1,795. 213-374-6857. A

Volkswagen, 1967 squareback, $1,800. 213-596-9748. A

Peugeot, 1969, new brakes & tires, $200. 213-326-6195. A

Monza, 1962, recent o/haul, $525. 805-495-1124. A

Chevrolet, 1964 Impala, 2-dr. h/top, V-8, auto. trans., p/s, $1,250. 213-882-2429. A

Station Wagon, 1960 Ford, needs eng. work, $75. 213-375-5629. A

Chevrolet, 1959, 2-dr., r/h, 6-cyl., auto., $225. 213-676-9518. A

Austin Healey, 1956, 100-4, 4-spd. & o/drive, soft top & tonn., $700. 213-353-0797. A

Chrysler, 1965 Newport, 4-dr., $1,900. 213-375-3813. A

Chevrolet, 1952 coupe, stick shift, $125. 714-962-7808. A

Pontiac, GTO, 1967, 4-spd., 360 h.p., $2,400. 714-893-9578. A

Ford, 1963, Fastback, 390 hi. perf. bored to 427 cu. in., tri-power, 4-spd., r/h, $900. 805-495-2269. A

Ford, 1937 coupe, original, $295. 213-370-4315. A

Cadillac, 1955 Coupe DeVille, full power, $750. 213-676-5334. A

Chevrolet, 1960, Impala, 2-dr. h/top, 283 punched to 292, stick, 3-spd., $300. 213-323-1649. A

Station Wagon, 1960 Falcon, w/'62 eng., $300. 213-327-0125. A

Mustang, 1965, V-8, auto. trans., a/c, p/s, p/b, r/h, $1,595. 213-374-7546. A

Mustang, 1965, 289 V-8, 4-spd., Ralley-Pac, convt., $1,499. 714-893-6620. A

MG Midget, 1966, wire whls., convt. top, tonneau, tach., r/h, $1,550. 213-869-6759. A

Pickup Truck, 1950, ½-ton, w/Oldsmobile V-8 eng. & hydramatic, $350. 213-676-6423. A

De Soto, 1956, 4-dr. h/top, p/s, p/b, $100. 714-774-2779. A

Jaguar XKE, 1963 coupe, $2,175. 213-675-2488. A

Volkswagen, 1968, auto., 6,000 mi., $1,800. 213-451-4261. A

Station Wagon, 1963 Chevrolet, 283 eng., p/s, a/c, $1,000. 213-596-2328. A

Household Items For Sale

Bed, twin, w/bolster & cover, $5. 213-377-6029. B

Cedar Chest, Lane, maple, 3 mos. old, $40. 213-379-1423. B

Desk, $25. 213-823-1910. B

Table, formica top, 4 uphol. chairs, $15. 213-479-5653. B

Bar Stools, 4 30″, dk. blue, $10 ea. 213-472-1418. B

China Cabinet, lge. custom-made, light oak, bowed glass, 4 low drwrs. 79″x48″x21″, $225. 213-892-8268. B

High Chair, Cosco, makes into youth chair, $10. 213-679-8426. B

Household Items For Sale

Bed, dble. solid maple, $15. 213-377-5059. B

Sewing Machine, Kenmore, blond wood cabinet, $45. 213-633-3500. B

Vegetable Juicer, Norwalk, hydraulic press type, $245. 213-677-6604. B

Dryer, elec. RCA Whirlpool, $30. 213-375-9985. B

Davenport, traditional style, nylon frieze, $45. 213-943-3516. B

Dining Room Table, walnut, 4 uphol. chairs, $20. 213-545-3495. B

Dryer, RCA Whirlpool comb., $25. 213-328-1520. B

Stove, apt. size, gas, 4-burner, $25. 213-376-3533. B

Dresser, 2 5-drwr., $15. 213-376-4831. B

Mirror, 24″, round, $8. 213-675-6020. B

Stove, O'Keefe & Merritt, gas, 4 burners, $35. 213-679-8525. B

Range, Sunray, gas, $40. 213-534-5498. B

Washer, G.E., front load, turquoise, $40. 213-324-9989. B

Stove & Oven, O'Keefe & Merritt, bltin-type, coppertone, 4-burner unit & dble. oven, $100. 213-325-3724. B

Bedroom Set, twin, w/mattresses, box springs & bedding, white w/gold trim, $200. 213-644-4994. B

Washer, 1968 Maytag w/gas dryer, avocado green, $400. 213-679-7155. B

Coffee Table, walnut, leatherette top, 19″x50″, $15. 213-378-0477. B

Hide-A-Bed, Simmons, dble. size. brown w/blue slip cover, $30. 213-324-2992. B

Desk, student's, 7-drwr., $25. 213-755-1071.

Miscellaneous For Sale

Bicycle, men's racing, Schwinn, 15-spd. gear comb., $30. 213-676-4915. C

Home, tri-level w/pool, cabana, 3-bdrm., 2 baths, o/sized liv. rm. & master bdrm., det. gar., fenced, landscaped, 15 min. to Norair, $31,500. 213-372-6830. C

Cemetery Lot, single, Parkview-Manchester side, Inglewood, $450. 213-753-7484. C

Home, 3-bdrm., 1¾ bath, bltins, fam. rm., f/place, cpts., dps., fenced rear yd., 4 yrs. old, in Huntington Bch., $2,200 or less dn., to 5¼% FHA, $21,000. 213-329-9464. C

Utility Boat, 18′, 50 h.p. Evinrude, 2 6-gal. gas tanks, lge. whl. tilt trailer, C.G. equip., $750. 213-679-8687. C

Carburetor, 4-bbl. Carter & manifold for Chev. 283, 301, 327. $25. 213-542-2098. C

Tuner, FM Eico HFT (90), $25. 213-327-4267.

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., trailer, $825. Box 2001. C

Ski Boat, 13′ Wizard, fiberglass tilt top trailer, no motor, $265. 213-378-3055. C

Porch Railing, ornamental iron, 15 ft. long, center post, hand railing, $27. 213-293-5993.

TV, b&w, Zenith, 17″ portable, $45. 213-430-7388. C

Boat, 12′ fiberglass runabout, trailer, 20 h.p. elec. start Johnson, all access., $250. 213-378-4541. C

Air Grinder, 8″ or 8″ air hammer w/25 ft. of ¼″ hose, 3″ disc wheels, $75. 213-373-3396. C

Wheelchair, Everest & Jennings, folding type, $50. 213-324-1908. C

Tape Player, Lear Jet, 8-track, stereo, for auto, $70. 213-830-6163. C

Drafting Machine, Bruning, 1966, $70. 213-675-5067. C

Organ, Lowrey Holiday, $475. 213-671-1432. C

Golf Clubs, bag & cart, $60. 213-393-7466. C

Utility Trailer, 4x8, $125. 213-326-1409. C

Harley Davidson, 50 cc, 1965, $70. 213-377-4943. C

Home, 3-bdrm., fam. rm., ¾ baths, cpts., dps., Redondo Bch., $27,500. 213-379-2554. C

Radio-Record Player, AM-FM, hi-fi, maple cabinet, Packard Bell, $30. 213-692-6336. C

Cemetery Lot, Terrace of Faith, Rose Hills, $200 ea. 213-867-0662. C

Triumph, 1967 T100C, 500 cc Scrambler, $850. 213-545-3972. C

Accordion, Cantino, 120 bass, $150. 213-675-7942. C

House, 2,000 sq. ft., Garden Grove, 2 stories, 5-bdrm., 2 f/places, bltins, cpts., dble. car gar. w/laundry rm., 12x22 covered patio, b/wall fence, GI at 5¼%, owner carry 2nd t.d., $35,500. 213-644-6270. C

House, 5-room, furn. on 2½ acres, enc. patio, terms, $14,500. 213-376-4787. C

House, 2-bdrm. stucco, 10 min. from Northrop, $16,500. 213-370-4423 days. C

Gun, Remington model 760, 30.06, Weaver K2.5 scope, sling, $110. 714-897-5041. C

Tank, head, for air compressor, many components, $50. 213-371-2531. C

Home, 3-bdrm., family rm., 1¾ bath, h/wood flrs., bltins, 10 min. from Norair, $31,500. 213-757-6240. C

Chemical Toilet, for camper, trailer, $25. 213-326-6657. C

Tools, ¼″ d.b. drill, motor, $15. 213-754-0817. C

Tires, 2 slicks on 8″ Chev. rims, $50. 213-327-4081. C

Home Exercise unit, Stauffer, $75. 213-375-4108. C

Xylophone, Deagan, $125. 213-329-5364. C

Pistol, 9mm auto., holster, extra clip, $50. 213-785-6142. C

Lawnmower, 22″, 3 h.p. B/S motor & catcher, $20. 213-329-3286. C

Miscellaneous For Sale

Pup, German shepherd, AKC, rabies shots, $50. 213-465-8684. C

Tri-Power, 3-2's, fits Oldsmobile, $25. 213-329-0504. C

Dog, part-toy terrier, brown, female, $10. 213-374-5133. C

Door, 42″ solid core, Schlage lock & knobs, $30. 213-377-4198. C

Train Layout, H.O., approx. 60 cars, mounted on 4x10 panel, many extras, $85. 213-291-0025. C

Piano, Kimball console spinet, mahogany, bench, $450. 213-291-3778. C

Snare Drum, Ludwig, stand & case, $50. 213-676-6415. C

Camera, Canon IVS2 bulb to 1000 sec., 28mm ultra wide angle f3:5, many extras, $150. 213-324-3146. C

Cemetery Lot, 4, Eventide sec., Green Hills Memorial Pk., incl. perpetual endowment care, $1,500. 213-376-4677. C

Organ, Thomas, mod. H3, blonde, 2 full manuals, $400. 213-328-9064. C

Sailboat, 9½′ Teacup, dacron sails, plywood & fiberglass, sand dolly, $160. 213-321-1655.

Home, 3-bdrm., lge. family rm., sep. gar., extra lge. lot, $31,850. 213-323-0826. C

Chaise Lounge, redwood, pad, $7.50. 213-324-4817. C

Speaker, hi-fi, 15″ extended range Jim Lansing D130, 4″ voice coil, mounted in Acousta Craft maple enc., $100. 213-326-5566. C

Surfboard, 9′10″ Rick Improvisor, wet suit, lge. racks, $125. 213-292-4958. C

Duplex, on C-4 lot, in Long Bch., low down, $13,500. 213-375-5885. C

Radio Equipment, for model airplane, Bonner 8 proportional transmitter, other access., $350. 213-645-6211. C

Train Set, Lionel Santa Fe, twin diesel, approx. 100 pcs. track, access., $40. 714-635-3315. C

Wedding Dress, Cahill gown, ivory brocade, chapel train, long sleeve, empire styling w/veil, $60. 213-679-4241. C

Motorcycle, 1967 Suzuki, X6 Hustler, $425. 213-677-8446. C

Micro-Caliper, Starrett, $15. 213-376-9600. C

Air Cooler, portable w/rolling stand, $18. 213-377-3806. C

Boat, 25′, 115 h.p. Chrysler Crown marine inbd., 3 scoop bait tank, sleeps 2-3, $3,750. Box 2002. C

Tires, 5 new 8.15x15 Firestone Deluxe Champion, $115. 213-756-1812. C

Honda, 1966 305 Scrambler, $500. 213-569-7742. C

Wig, human hair, med. length, blonde, $15. Box 2003. C

Pistol, Derringer, single shot, 22 cal., $25. 213-327-8927. C

Acreage, 5 acres, Antelope Valley, $49 dn., $49 mo., no int., $4,900. 213-378-1026. C

Gun, Winchester, old mod. 49, recoil pad, sling & 38 Colt, 2″ detective special, $160 or sell sep. Box 2004. C

Trumpet, $100. 213-379-3773. C

Land Camera, Polaroid auto., mod. 220, b&w or color, $65. Box 2005. C

House, on 2.3 acres, master planned apt. in Agoura, $67,500. 213-783-8271. C

Triumph, 1965, 500 cc, $750. 213-644-6629.

Fire Detection unit, Honeywell, 8 fixtures, $100. Box 2006. C

Motorcycle, 1968 BSA 650 cc, $895. 213-429-1114. C

Surfboard, Dewey Weber, 9′1″, $65. 213-534-1231. C

Bicycle, girl's 26″, $15. 213-324-7730. C

Drill Press, Dunlap, bench model, ⅓ h.p. motor, $40. 714-528-2382. C

Surfboard, 8′10″, $30. 213-375-9397, 213-375-2091. C

Saddle, Western, 15″ padded rough-out seat, $150. Box 2007. C

Revolver, 32 cal. Colt Frontier, $40. 213-645-1274. C

House, 3-bdrm., 2 baths, high beam ceiling, lge. f/place, cpts., extra lge. gar. w/adjoining rm., $24,500. 213-835-1089. C

Guitar, left-handed, Kent elec., 2 pickups, $100. 213-373-5041. C

Lawnmower, Sears 18″, 6 blade rotor, catcher, $45. 213-370-6734. C

Units, 3, Inglewood, furn., 1-bdrm. ea., open beam ceiling, f/place, $35,950. 213-676-5425.

Door, 8′x6′ sliding, glass, $60. 213-371-8051.

Raingutter, 110 ft., downspouts & fittings, $25. 213-670-6365. C

Cello, German-made, full size, $250. 213-430-7274. C

Honda, 1967 305 Scrambler, $495. 213-425-8366. C

Cemetery Lots, 4, Emerald Terrace, Glen Haven Cemetery, $275 ea. 805-498-2668. C

Camera, 35mm Leica 3F, F:2 Summitar, case, other access., $200. 213-784-2097. C

Stone Prints, 10 Currier & Ives, miniature, $50 or sell sep. 213-644-1359. C

Boat, 15′ Glen L. Rebel, 105 h.p. Chrysler outbd., lge. wheel trailer, $1,700. 213-323-7544. C

House, 3-bdrm., 2 baths, cpts., dps., 2 patios, pool w/dressing rm., fenced, many extras, Rolling Hills, $64,950. 213-831-3969.

Airplane, 1964 Cherokee, 180 h.p., 170 hrs. S.M.O.H., MK-12 360, whl. fairings, $8,500. 213-372-0961. C

Miscellaneous For Sale

Guitar, Rossi elec., $60. 213-321-4801. C

Poodles, AKC reg., black, 2 males, 9 wks. old, $65. 213-754-3665. C

Wanted to Buy

Tent, in good condition, min. size approx. 8 x 10. 213-323-8213. D

Aquariums, or equipment, in good condition. 213-542-2662. D

Slide Rule, w/case, 12″ log log duplex trig or equivalent; K&E, Pickett & Eckel or equivalent. 213-242-9723. D

Heathkit, a.c. v.t.v.m. Model AV-3. 213-675-0788. D

Corvair, 1962, van body, does not need to be in running order, prefer good van body. 213-679-9381. D

Hardtop for 1966 Triumph Spitfire. 213-328-3306. D

Thunderbird, 1965, 2-dr. 213-673-1253. D

Drafting Machine in good condition. 213-373-3128. D

Automobile for transportation, willing to pay $50 to $65. 213-634-6069. D

Drafting Table, Mayline or Hamilton w/steel base, 48 or 60″ dwg. board. 213-892-5456. D

Toys, antique, children's book esp. Big Little Books, old animated gum machines & old advertising art. 213-826-3061. D

Doghouse, for Labrador retriever. 213-370-7092. D

Boat, 8-10′ lightweight alum. or fiberglass. 213-375-8804. D

Heathkit DX35 or DX40, for parts, or pwr. transf. for same. 213-839-5438. D

Revolver, 38.40 Smith & Wesson, dble. action, 213-676-6390. D

For Trade

Trailster, Cushman, trade for camper or 1963 Chev. 213-675-6303. E

Dryer, elec. Hotpoint Deluxe, trade for slant-board, workable TV, prof. hair dryer or w/w tires, 6-ply, 700-15. 213-671-8401. E

Free (To Be Given Away)

Auto Heater, South Wind, 6 v., elec., 1-bbl. carb. 714-535-3723. F

Pup, black, mixed breed, 7 wks. old. 213-376-7030. F

Rentals Offered

House, 2-bdrm., small den, near Marina del Rey, $175. 213-474-0110. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Apt, 1-bdrm., unfurn., bltins, cpts., dps., carport, no pets or children, $100 mo. 213-327-3895. G

House, 3-bdrm., 2-car gar., fenced yd., children & pets o.k. $195. mo. 213-326-2959. G

House, 2-bdrm., cpts., gar., fenced rear yd., 1 mile to Northrop, $145 mo. 213-325-5705.

Apt, 2-bdrm., 2 baths, cpts., dps., bltins, gar. storage space, 1 child, no pets, $150. 213-672-5798. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Rentals Wanted

Cabin, or room, in high desert for telescope observation of sky, weekends. 213-329-6728.

House, 3-bdrm., modern, South Bay area, reasonable rent, approx. $200, in return for excellent care. 213-679-7347. H

Child Care

Child Care offered, my home, 5 days a wk. 213-679-4822. I

Found

Slide Rule, 12″, in Norair parking lot, Plant Three. 213-671-1490. K

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Lincoln Blvd. & Manchester, Playa del Rey. Orazio De Angelis, Norair ext. 2568, 2569, 213-823-5254, 213-670-9271.

Sepulveda & National Blvd., Culver City. Douglas R. Burton, Norair ext. 1992.

Rosecrans & Sepulveda, Manhattan Beach. Louise Gaillaud, Norair ext. 2129, 213-372-6371.

Crenshaw & Sepulveda, Torrance. Linda Foster, Norair ext. 2605, 213-326-5004.

8 a.m. — 4:45 p.m.

Imperial Hwy. & Bloomfield Ave., Norwalk. Sandra Costello, Nort. Haw. ext. 495, 213-863-3895.

Amie Ave. & Torrance Blvd., Torrance. Need to take son to babysitter on the way to work. Ricki Willey, Nort. Haw. ext. 279. 213-370-9186.

Hawthorne Blvd. & 226th, Torrance. Charlene Malara, Nort. Hawt. ext. 511.

Rides Offered

8 a.m. — 4:45 p.m.

Fly To Work From Orange County Airport to Hawthorne. Sheldon O. Bresin, Norair ext. 4863, 714-532-1510.

Personals

I wish to thank all the wonderful Northrop people who helped keep my spirits up during my long illness & played a large part in bringing me back to my job. I am most grateful. MARIE LUCIE MAC DONALD.

Sincere thanks to the many friends for their kind deeds & expressions of sympathy in the recent loss of my husband, Frank. WANDA KALUS. L

For Sale or Trade

Pickup, 1951 Dodge, V-8, auto. trans., $100 or trade for car. 213-596-2920. M

Rug, 12′x13′, beige wool, w/pad, $55 or trade for vacuum cleaner or maple coffee table. 213-644-7176. M

Dune Buggy, VW, f/glass body, tuned exhaust, $1,250 or trade for VW bus or Kombi. 213-396-6739. M

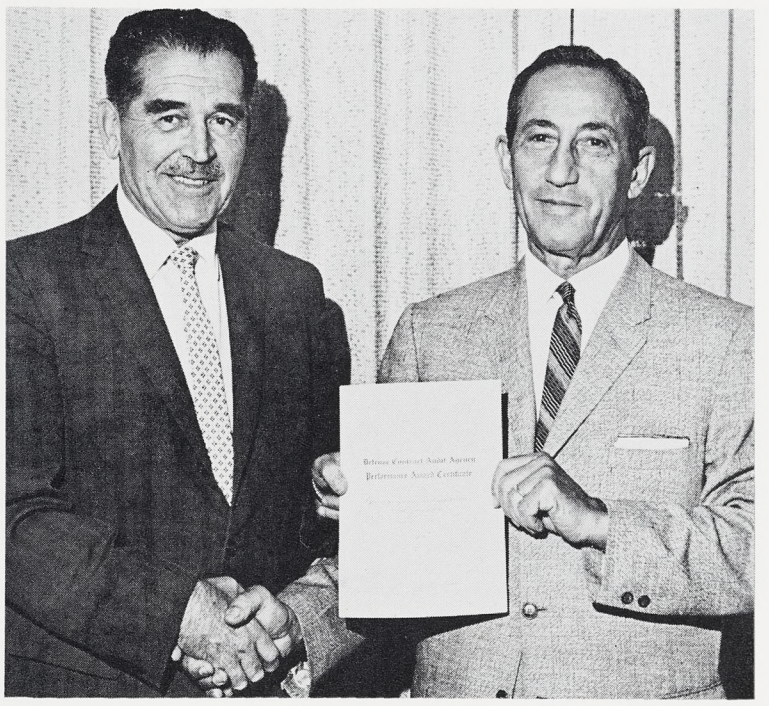
UCSB Extension Course In-Plant Attended by 70

Northrop Ventura is sponsoring a University of California at Santa Barbara extension course leading to a certificate in manufacturing engineering.

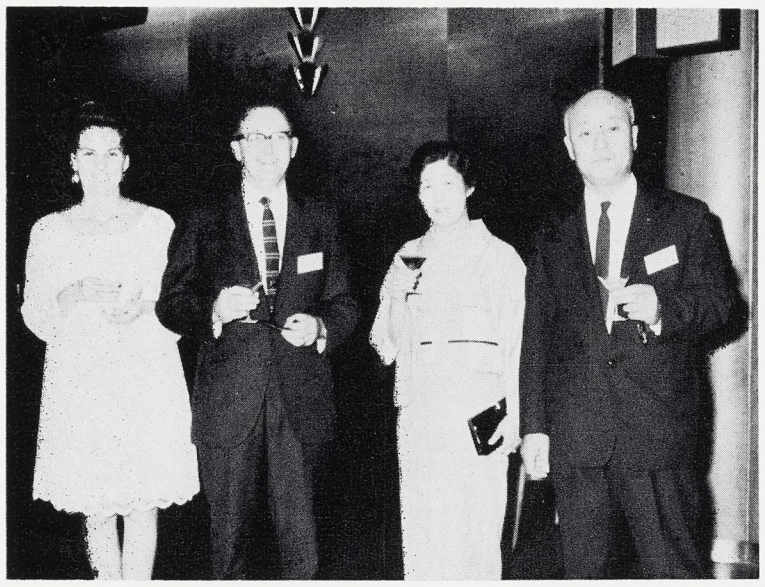
The first 12-week course began on September 24 in the Ventura Division assembly room, and is being attended by 70 employees. Foremen, schedule planners, industrial engineers, tool engineers and buyers are some of the people enrolled in the course.

The initial course is called "Introduction to Project Planning Techniques," to be followed in the next quarter by a course called "Elements of Production Operations and Research."

To gain the UCSB certificate, students must complete eight courses selected from 19 offered in the program.



EXCELLENT PERFORMANCE—Harry R. Silverston (right), Defense Contract Audit Agency senior auditor assigned to Northrop, receives a certificate for excellent performance from Harold D. Parsons, Defense Contract Audit Agency resident auditor for Northrop.



WELCOME ABOARD—Mr. and Mrs. Bill Rothwell (left) share a light moment with Dr. and Mrs. T. Hikida at a party welcoming Nortronics families to Japan.

MAKING FRIENDS

Hawk Team Members Settled in Nagoya

All of the overseas resident personnel of Northrop Nortronics Nagoya have now arrived in Japan and are becoming a part of the Japanese community in which they live, according to recent correspondence received from the program's director, Bill Rothwell.

The team is in Nagoya to help administer the Japan Hawk program under contractual agreements with Raytheon's Missile and Space Division.

In celebration of their arrival, the Nortronics personnel and their wives were guests at a reception party given by their Japanese host, Mitsubishi Heavy Industries (MHI). Dr. T. Hikida, general manager of MHI Nagoya Aircraft Works, welcomed the group. In an informal atmosphere at the New Nagoya Hotel, they were served what Mr. Rothwell described as "many kinds of delicious foods such as sushi, tempura, roast beef and assorted hors d'oeuvres."

Chuck Barnard, Don Koehler, Chuck Stevens and their families and Bob Jones are living in the Mitsubishi Tobe Mansions in Minami-Ku, Tobe-cho, near the Northrop Nortronics office in the MHI Aircraft Works' Oye plant. The quarters are modern apartment houses. The Rothwells are living in a Japanese house in Showa-ku, Nanzan-cho, about six miles from the Oye plant.

The children bus to the new Nagoya International School about 16 miles away. Mr. Rothwell and Mr. Barnard were elected PTA president and vice president, respectively. As PTA president, Mr. Rothwell is also on the school's board of directors.

Now that they are settled in their new homes, the Nortronics people in Nagoya plan to start visiting some of the interesting sights around that area of Japan when time allows.

Others of the hosting party at the reception were M. Doi, vice general manager, MHI Nagoya Aircraft Works; R. Wakasugi, manager, Business department; M. Kuroiwa, manager, first Engineering department; K. Yamashina, manager, Material department; C. Uyeda, manager, Manufacturing, Daiko plant; E. Iwayama, assistant manager, Production department, Oye plant; and Miss Keiko Sato, MHI Japanese/English speaking employee assigned as secretary to Mr. Rothwell and the Northrop Nortronics Nagoya team.

BEST COMEDY ACTRESS

Theatre Picks Mrs. Lester

A Nortronics woman is Chapel Theatre's Best Comedy Actress of the 1967-68 season.

Patricia Lester, last season's star of "Guys and Dolls," was chosen to receive the award by a board of judges composed of local civic leaders. She won it for her performance in the role of "Adelaide" in the popular Frank Loesser musical.

The show opened to full houses last March in Lomita and played to standing room only crowds over an extended seven-week run, grossing more than any production in Chapel's 30-year history.

Mrs. Lester, a secretary to Lee Hausman in the Finance department at Palos Verdes, has studied with Agnes Moorehead and has spent more than seven years of spare time as an actress in community theatre. She received her trophy — an "angel" — at the theatre group's annual awards ceremony and dinner dance.

Connie Sampson of Norair and Carolyn Louise Moffett of Northrop Corporate Laboratories also performed in "Guys and Dolls" and George Bingham of Norair's Metal Bond shop handled lighting for the show.

PATRICIA LESTER SINGS 'ADELAIDE'S LAMENT'

NRC Basketball Now Recruiting Anaheim Team

The Nortronics Anaheim basketball team is now being formed, according to Don Ross, basketball commissioner.

Two men are returning from last year's squad, but 13 others are needed to complete a 15-man roster. Play will be in either an industrial or city league under the sponsorship of Anaheim's parks and recreation department.

Practices will begin as soon as a team can be formulated. League games begin in January. Both practices and games will be played one night a week at 7 p.m. or 8:30 p.m. at local high school gyms in Anaheim.

Signups are being accepted at the Personnel Activities office or by contacting the commissioner on ext. 431.

AID-NORAID DRIVE SET

Dates for Northrop Corporation's annual charity fund solicitations—the AID-NORAID campaign—have been set for 1968.

The drive gets under way November 4 and concludes November 15. During this time personnel at the Corporate office, Norair and Nortronics Divisions, will be given the opportunity to give through simple weekly payroll deductions. Contributions will go to support many welfare and charity agencies within the scope of AID - UNITED GIVERS, plus Northrop's own internal charity fund, NORAID.

Nortronigals Will Appear In Fall Fashion Show October 19

The Nortronics Anaheim Women's Club will present their fall fashion show on October 19 at the Los Coyotes Country Club, according to Donna Robison, club president.

Approximately 20 "Nortronigals" will model the newest of the 1968 fashions for fall.

A social hour has been announced for noon with a luncheon and the fashions following at 1 p.m.

Tickets are priced at $3.50 and may be purchased at Personnel Activities.

The country club is located at 8888 Los Coyotes Drive in Buena Park.

Further information may be obtained from the club president on Anaheim ext. 613.

RADIO CLUB MEETS

Northrop Radio Club at Hawthorne will hold a monthly meeting at 5 p.m., October 14, at the NRC Clubhouse. One of the highlights will be the activation of the club's new transmitter.

TWO TOASTERS TALK TONIGHT

Northrop's Smoothsayers Toastmistress Club will host a joint meeting with Toastmasters 212 at 6 p.m. tonight at Dandel's, Los Angeles.

Laurie Griggs will be the guest speaker. Norair's Felix Dunnett, Nortronics' Henry Greenberger, and Northrop Architectural System's Ken Henry will participate in a humorous speech contest. Norma Conrad and Lois Paris will present the feminine view.

Reservations may be made through Marguerite Dougherty, ext. 421 at Nortronics Hawthorne.

747

(Continued from page 1)

of the fuselage and up the leading edge of the towering tail fin. Lettering is in blue. Across the nose area are the insignia of the airlines that have placed orders for the 747.

Twenty-six stewardesses, representing the airlines that have already purchased 158 747's, christened the aircraft by simultaneously breaking bottles of champagne along its side.

While festivities were in progress in Washington, Northrop Corporation personnel at three major divisions and a subsidiary were busily working on subsequent components for other 747's.

Northrop's 747 involvement is the largest program of its kind in the company's long history. It is an all-company effort, which, at peak production, will require more than 5,000 employees working to assure its continued success.

As an example, Northrop is on schedule with Norair already delivering its sixth shipset of 747 assemblies comprising the 153-foot-long main passenger compartment of the Boeing 747. Each shipset of 747 fuselage components contain unique stringers, produced by Nortronics Anaheim. And Northrop Ventura has already delivered four shipsets of unique 747 fiberglass wing fairings, each set comprised of 105 major sections measuring 1,590 square feet.

NRC IS PLANNING BIG 'FALL FLING'

Northrop Recreation Clubs in the Hawthorne complex are planning a "Fall Fling," November 9 as their annual fall dance and get-together for Northrop families.

It will be held at the Mayflower Ballroom, Inglewood.

Happy hour begins at 8:30 and refreshments will be available at reduced rates. Dancing to the music of Jimmy Talbert's orchestra begins at 9:30 p.m. and continues until 1:30 a.m. Casual dress is suggested.

Tickets, at $1.50 per person, are available through Personnel Activities outlets.

FAMILY DAY

(Continued from page 1)

in their respective locations and motion pictures of various products will be presented in Building Two. Employees and guests will enter through the east gate on Crest Road.

Northrop Systems Laboratories personnel will provide a space systems display featuring models of various Northrop-built spacecraft on the second floor of the NCL building.

At the Johnson Facility in Hawthorne, highlights will be the Navigation department's C-5 display and the OMEGA navigation receiver production line.

Page Court's Y-41 Fabrication Facility near Angel Stadium will turn out souvenir toy tops for the children visiting that facility on a single spindle semi-automatic lathe.

All locations will have general displays of Northrop products and programs to give a concept of what is done at the facility.

TWILIGHT GOLF WINNERS at Anaheim are Paul Neidhardt (left), supervisor of Timekeeping, and George Baldwin, senior designer. In addition to winning the trophy for first place honors, Mr. Niedhardt and Mr. Baldwin set a record for total points scored.

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California — Vol. 26, No. 21 — October 23, 1968

Select Group To View C-5 IDN System

Select members of the navigation, avionics and aircraft industry will see Northrop Nortronics navigation devices, equipment and components at the Fourth Biennial Guidance Test Symposium set for November 6-8 at Holloman AFB, New Mexico.

Four hundred national guidance experts are expected to attend the symposium which is sponsored by the Air Force Missile Development Center at Holloman. It will provide a forum for the scientific community concerned with guidance and control to discuss latest advances and future requirements in these fields.

Northrop Nortronics' Navigation department will display the C-5 Inertial Doppler Navigation System both in a static display of components and in a USAF C-130 test aircraft equipped with the system, according to Lloyd A. Jones, chief, Product Support.

"The C-130 Lockheed Hercules has been converted to a walk-through display," Mr. Jones said. "Visitors will be able to see our C-5 equipment in actual operations. Rich Crane, supervisor, Navigations Systems, Application unit, will be in charge of the Nortronics displays."

Precision Products Department of Nortronics at Norwood, Massachusetts, builder of the C-5 inertial - platform - gyroscope and many components for other programs, will also have a products display. In addition, PPD is expected to present a paper on "Gyro Compassing" at the symposium.

Tickets Available For 'Funny Girl'

A Northrop Theatre Party is being planned to attend the 2 p.m. showing November 16 of "Funny Girl" at the Egyptian Theatre, Hollywood.

Regular $4 tickets are now available for $3.20 at all Personnel Activities outlets.

A Message to All Northrop Personnel

You may have received last week a copy of the paper distributed at our plants by the UAW Union setting forth its intent to organize Northrop workers in Southern California.

The current efforts of this union follow a familiar pattern. Since 1945 similar efforts have been made 10 different times. On five of these occasions, the union did not obtain sufficient interest to authorize elections, and our employees voted down the union in each of the other five attempts.

An obvious reason why this union does not respect your previous rejections of unionization is the fact that Northrop employees represent a potential $1 million per year revenue for the union, that would be paid by more than 15,000 Northrop employees at an average of $6 in dues each month.

The question of unionization at Northrop is a critical one which will affect every employee whether he be supervisory, salaried or hourly. I feel that it is mandatory that you and your family understand all the actual facts and implications involved in this issue.

To be certain that all Northrop personnel have the opportunity to weigh objectively all factors raised by the union during its effort to gain your support, I have asked that your division general manager keep you fully informed on the important issues.

So that there can be no misunderstanding of your company's position on the question of unionization I can state it very briefly.

The company believes in your right to choose freely to be unionized or not to be unionized without interference from anyone.

It is our view that the good relationships among the individuals in this company have been achieved and maintained by working together directly, and that, for this reason, there is no need for a union here.

The intervention of an outside group can only serve to weaken the recognition of the individual which has played such an important part in the growing success of our company and in making it a good place to work.

Thomas V. Jones

President

AID-NORAID Campaign Set To Run November 4-15

Northrop employees' 14th annual AID-NORAID campaign will be conducted November 4-15 among personnel assigned to the Corporate office, Norair Division, and Nortronics West Coast and Huntsville, Alabama, operations.

This is the only solicitation of its type held annually at Northrop.

It provides employees a simple means for supporting charitable, health and welfare agencies through weekly payroll deductions.

Over the past 13 years, in excess of $3.2 million has been raised at Northrop for distribution through AID-UNITED GIVERS and NORAID, Northrop's own in-plant charity fund.

Campaign workers this year will include more than 300 volunteers, each representing a special group or function. To them fall the tasks of explaining the drive, contacting all personnel within their group and asking their help in putting the campaign over the top.

Unlike most campaigns of this type which seek dollar or participation goals, the AID-NORAID effort will seek to raise, on a continuing basis, the most money from the most people in the most simple and efficient manner possible.

Updated payroll deduction tab cards are being used this year

(See NORAID, page 6)

Big Suggestion Submission Jump Is Noted Throughout Nortronics

The number of suggestions submitted by Nortronics personnel has increased several times over the number submitted a year ago, according to Larry King, administrator of the Suggestion Award program.

"As an example of the way employee ideas are booming," Mr. King said, "we have made 230 cash awards in the last year where there were only 300 suggestions submitted in the previous three years."

Suggestions are now running from 60 to 80 submissions a month, but have reached as high as 125. About one out of every three receive awards.

In the last 90 days, employees submitted over 200 suggestions. Twenty-nine have already received awards and 106 are still open for evaluation.

Mr. King, who has been administering the program for the past 13 months, attributes the great increase to letting people know about the program, prompt reaction to ideas submitted, increased amount of awards, and the enthusiastic interest of all levels of management.

General Dynamics Selects Nortronics for ASMS Role

General Dynamics Corporation has awarded Nortronics a $200,000 study contract to define the automatic test system as a part of a contract definition award for the Navy's Advanced Surface Missile System, according to J. M. Ricketts, acting manager of Nortronics Anaheim.

Nortronics has participated with a team headed by General Dynamics Pomona Division since early May of this year. Nortronics' role in the ASMS program is to develop the integrated performance monitoring system for on-line and off-line testing of ASMS segments and replaceable components.

General Dynamics other team members sharing in the Navy contract definition award are Hughes Aircraft Company's Ground Systems Group and Sperry Rand Corporation's Sperry Gyroscope and Univac Divisions.

Nortronics' ASMS Program Manager M. G. Ventura, is assisted by N. S. Bishop for Project Engineering Management; W. C. Patterson for Marketing; C. E. Pollard for Planning and Control; and C. D. Leavenworth for Integrated Logistics Support.

Assistant Division General Manager Frank Lynch heralded the ASMS program as an opportunity for Nortronics to participate in a new business area in extension of the Anaheim department's established product lines.

'Firsts' Achieved In Noise Figure Meter

Northrop Nortronics engineers achieved two "firsts" in design of a noise figure meter which measures radar sensitivity, according to a paper presented at the Government Microcircuit Applications Conference held this month at the Bureau of Standards in Maryland.

The paper, by Lyle Rennick, Automation Systems engineer specializing in circuit design, was entitled, "Integrated Circuit Noise Figure Meter."

NORVIPS Set For Showing to Army Group

An airborne flight safety system, developed by Nortronics Palos Verdes, will be demonstrated during the annual Association of the Army meeting at the Sheraton Park Hotel, Washington, D.C., October 28-30.

The device, known as the Voice Interruption Priority System (NORVIPS), uses a woman's voice to alert aircraft crewmen of hazardous conditions in flight.

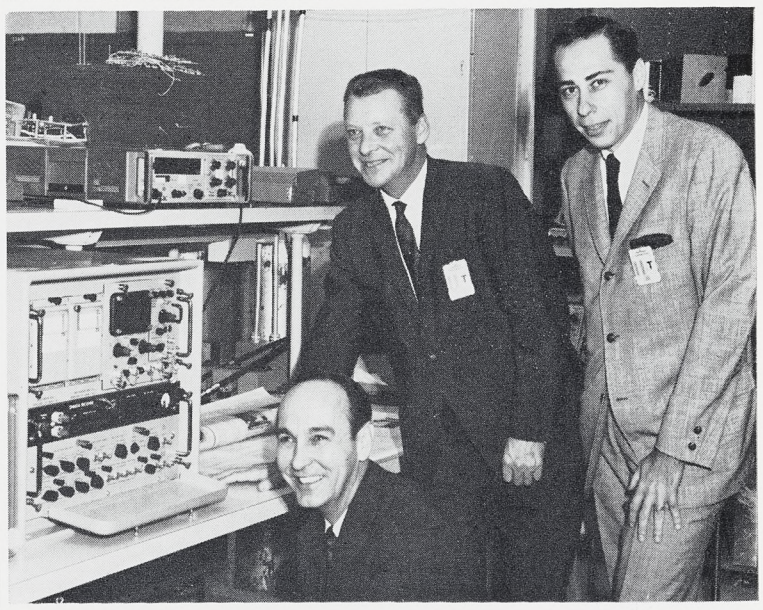
A continuous Inflight Performance Recorder (CIPR), designed to provide permanent maintenance records, will also be displayed by Northrop at the association meeting.

These flight safety devices will be used on the Army's OV-1 Mohawk aircraft as well as on CH-7 and CH-54 helicopters in Vietnam.

In the systems' predetermined malfunction messages are recorded, and vital aircraft and weapon systems are monitored by NORVIPS. When a problem occurs, the voice transmits its warning over the crew's earphones. The message is repeated until the problem is corrected.

Government flight tests have shown that crew response to a NORVIPS message takes less than three seconds. This compares to an average of 18 seconds when only warning lights are used.

The U. S. Army Electronics Command at Ft. Monmouth, New Jersey, has placed an initial order with Northrop for 350 NORVIPS and 354 CIPR units.



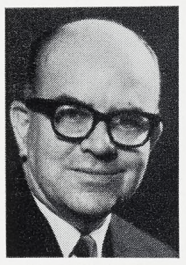
NORTRONICS OMEGA I navigation receiver, undergoing maintainability demonstration tests, is inspected by Captain M. X. Polk, USN (center), and Joe Petrecca (right) during their recent program review visit to Nortronics' Navigation department, Hawthorne. Vic Moore (left), AN/SRN-12 project engineer, explains the tests.

See Family Day Photos on Pages A and B

NORTHROP NEWSMAKERS

Daniel E. O'Halloran, Norair, was elected president of the American Society of Nondestructive Testing at the group's 28th annual national technical conference this month in Detroit.

Mr. O'Halloran, active in the Society for the past 16 years, has served previously as national secretary, treasurer and president-elect. He also served as an officer and director of ASNT's Los Angeles Section as well as a Don Bosco Technical Institute Student Section counselor. Through his efforts the ASNT established the Ray Pulk Memorial Scholarship Award at Don Bosco.



Mr. O'Halloran

* * *

J. H. Cannon, Norair, will discuss "Skin Quality Part Protection" at a November 11 meeting of the Packaging and Materials Handling Society meeting.

* * *

Royal B. Jackman, Norair, has discussed "Organization Concepts for Aerospace Laboratories" at a fall management meeting of the Society of Experimental Stress Analysis in San Francisco.

* * *

K. C. Wu, Norair, authored a technical note titled "Continuous-Cooling Transformation Diagrams of Ti-8AL-1Mo-IV" published in Transactions Quarterly by the American Society for Metals.

* * *

Henry Still, Corporate office, discussed "Man's Future Environment" before the annual conference of the Western Association of Railway and Industrial Surgeons, October 4 in San Francisco. Mr. Still is the author of two recent books, "Will the Human Race Survive" and "The Dirty Animal."

* * *

Johnny Via and **W. D. Thomas,** Ventura, are attending a 17-week UCLA course on "Counseling on Alcoholism and Related Disorders." Course information will be utilized in counseling work.

* * *

R. A. Flink, Ventura, has been re-assigned from Unmanned Aeronautical Systems to International Marketing. Mr. Flink has held previous posts in Customer Relations, the Northrop Washington, D.C. office and Production Marketing.

* * *

James W. McDonald and **James R. Stevens,** Norair, have co-authored an article "Optimized Design of Subsonic Lifting Surfaces" for publication in the AIAA Journal of Aircraft.

* * *

D. J. Harnett, Corporate office, has presented a speech titled "Cost and Price Analysis" before a course in Government Contract Management at the University of San Francisco.

* * *

Chuck Merlian, Ventura, has served as program chairman for the quarterly meeting of the Aerospace Organization Planning Round Table (AOPRT).

Principal speaker for the conference was Dr. E. L. Harmon, Norair, who discussed "How Hypnotism Can Unlock Management Potential."

* * *

Dr. E. L. Harmon, Norair, has presented a speech on "Advanced Composite Materials for Aircraft Structural Applications" before the San Diego Chapter of SAMPE.

EXECUTIVES ATTEND ADVANCED COURSE

Seventeen of the company's top management personnel are currently attending the fall session of the Northrop Advanced Management Course at Palo Alto, California.

The program is the only such internal course for Northrop top and upper mid-level managers. It is designed to better equip them for the tasks of professional management, broaden their perspectives, help them recognize and take advantage of change, and to establish common semantics between all elements of the corporation.

Guest speakers are provided by the Stanford University Graduate School of Business. Course administrators are John Rushmer, director, and Lee Thornton of the Corporate office of Management Development.

Page Begins New Iranian Earth Station

Page Communications Engineers, Inc., a Northrop subsidiary, has begun work on the first satellite communications earth station in the Middle East in the western section of Iran, near Hamadan.

The station, scheduled to go into operation in October 1969, will link Iran with North America, Europe and Africa tnrough Intelsat III, a new communications satellite to be orbited over the Atlantic Ocean next summer under sponsorship of the International Telecommunications Satellite Consortium.

With the system, Iran will be able to transmit and receive telephone and telegraph messages as well as radio and television, black and white and color. Calls to and from Iran to the United States and Europe that now normally encounter lengthy delays will go through almost immediately.

The station in Iran will be built around a 100-foot-diameter steerable antenna and will be tied to the country's central communications center in Tehran by a microwave system.

Under the $5.25 million contract, Page is also conducting a 15-month training program for Iranian engineers and technicians to enable them to maintain and operate the station independently.

Officials of the Iranian Ministry of Post, Telegraph and Telephone said entry of Iran into satellite communications will be a "vital factor" in enhancing the growth of the country. It is expected that Iran's revenues from international communications will double by 1970.

Page has installed more commercial satellite communications earth stations than any other company in the world.

TIME CHANGES AGAIN SUNDAY

Over the coming weekend the nation makes its annual fall switch from Daylight Saving time to Standard time.

Northrop Corporation facilities will adjust their normal operations to comply, with work shifts beginning after midnight Saturday starting an hour later in keeping with the new Standard time.

AZTEC AWARD—The Mexican-American Opportunity Foundation has presented special awards to Northrop divisions for their participation in the group's On-The-Job Training Program. Dionicio Morales, executive director (left center), has just presented the award to Alan C. Morgan, vice president-Industrial Relations. Looking on are R. R. Nolan (left), senior vice president-Manufacturing and Administration, and William Larrabee, retired Northrop vice president.

Moment of Decision Is Near; National Elections At Hand

Less than two weeks from today America's voters will go to the polls to choose a President and other government officials.

Election day is November 5. The most important thing you can do that day is VOTE.

In order to win a clear victory, a presidential candidate must receive at least 270 of the possible 538 electoral votes.

If no candidate receives this majority, the deadlock cannot be broken until December 16 when state electors meet to cast the Electoral College ballots. It is possible for some electors to switch their votes since only 16 states require electors to follow the popular vote.

If the Electoral College also deadlocks, then the election goes to the Senate (which chooses a vice president), and the House of Representatives (which elects the president from among the three top candidates).

In the House each state, regardless of size or population, would have but one vote per ballot and a quorum requires only 34 states to be represented. A two-thirds majority of this quorum, or 26 states each casting one vote, thus could elect the president.

It is possible that 26 states, with one-fourth of the nation's population, could outvote 24 states with three-fourths of the population.

So your vote is important November 5. Don't fail to cast it. It is a cherished right that cannot be delegated.

AF TO ADD 10th PILOT TRAINING BASE

Plans for the establishment of a 10th Undergraduate Pilot Training program base have been revealed by the Air Force.

The base, at Columbus AFB, Mississippi, is slated to open next summer.

Northrop-built T-38 Talon trainers are utilized at each UPT base in the final phases of pilot training.

The Air Force has indicated Columbus AFB will boost its pilot training capacity from 3,950 to 4,400 pilots annually.

Bases currently involved in the UPT program, all equipped with T-38 supersonic trainers, include Randolph, Laredo, Laughlin, Webb and Reese AFB's in Texas; Williams AFB, Arizona; Vance AFB, Oklahoma; and Moody AFB, Georgia. In addition, Tyndall AFB, Florida, trains instructor pilots for the entire UPT program.

SKULL SESSION—Participants in Northrop's Advanced Management Course at Palo Alto, California, listen to point made by Stanford University Professor Harry Rathbun (left foreground, left photo). Clockwise from him are M. G. Gonzalez, W. E. Woolwine, and R. M. McNamara of Norair; P. O. Wierk and F. S. Perego, Corporate; Milt Kuska, Norair, and E. J. Noonan, Nortronics. At bottom right is J. B. Rushmer, Corporate office. In right photo, clockwise from top, are D. D. Warner, Ventura; Dr. D. A. Hicks and L. R. Thornton, Corporate; T. L. McCarthy, Norair; P. L. Faranda and C. O. Anderson, Hallicrafters, and R. E. Horner, Corporate senior vice president. Not shown are Frederick Stevens and Ross Miller of Nortronics.

Busy Northrop Field Test Crews Put Product Lines Through Their Paces

It's 11 a.m. in El Centro, and a Parawing and its test vehicle are released from a huge Air Force C-130, to make their slow descent to the California desert.

It's noon at the Navy's Pacific Missile Range at Point Mugu, and Northrop Ventura's MQM-74A target drone is launched from a ground pad into a successful flight over the ocean, to be retrieved by its own parachute system.

Back at El Centro, at midmorning of another day, the Apollo is tested—as the date for its first manned flight draws nearer—and the triple-parachuted system is again successful.

The products are different; the test requirements are different, but the test personnel are the same—Northrop Ventura Field Test personnel, assigned to the field and systems testing of all Ventura products.

The last few months — since testing began on both the MQM-74A and the intermediate-scale Parawing—have been busy for Field Test.

"We are at the peak of our activities," Supervisor Ken Wagoner said, "because all these products are through design and are ready for full testing."

Among the duties of the Field Test crews are proposal writing, field test planning, data reduction and report writing — plus, of course, the conducting of the actual tests.

"We take the products — the drones, for example," Mr. Wagoner said, "and fly them under conditions in which they would normally be flown. We re-create actual flight conditions as closely as possible, and then determine just how well the product withstood the test conditions to which we had subjected it."

About half of the personnel attached to El Centro—for both Parawing and Apollo testing — are permanently stationed there. Another 25 per cent are sent there on a temporary basis, and the final one-fourth consist of local employees—those who are hired from the El Centro area.

Some employees find themselves working on both programs, rather than the Parawing or Apollo exclusively.

"That way, we can place support wherever it is needed," Mr. Wagoner said. "We strive for greater flexibility."

At El Centro, there are about 20 employees for whom Northrop Ventura Field Test, has responsibility. There are another 25 assigned to Ventura itself, including many who go to Point Mugu for the MQM-74A testing.

Mr. Wagoner, who has been with Northrop Ventura for three and one-half years, explained that the test planning engineer is the key man in the operations of the Field Test group.

"He is responsible for master test plans, detail field test plans, final test reports, the establishing of future test requirements and other important details," he said.

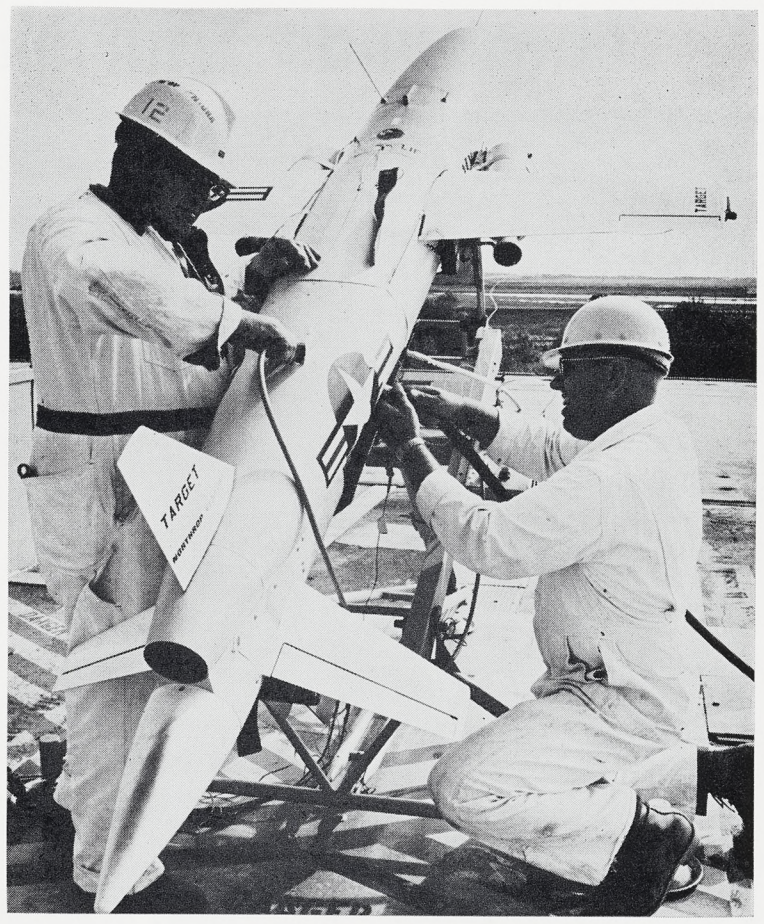
Each program has its own test planning engineer or engineers. Apollo has two, and the Parawing and MQM-74A each have one.

Supporting the test engineer are Analysis, Electrical Design, Mechanical and Fabric Design, Project office, Production and Data Reduction.

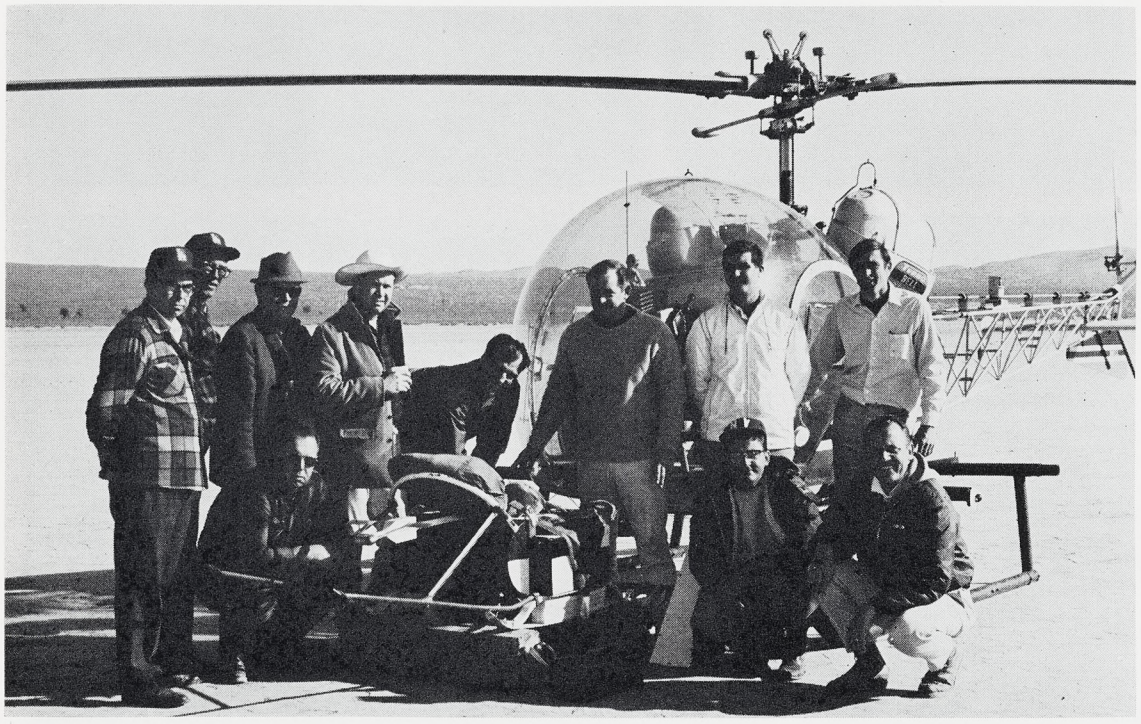
The test planning engineer coordinates all technical information with the test director, who is at the field site.

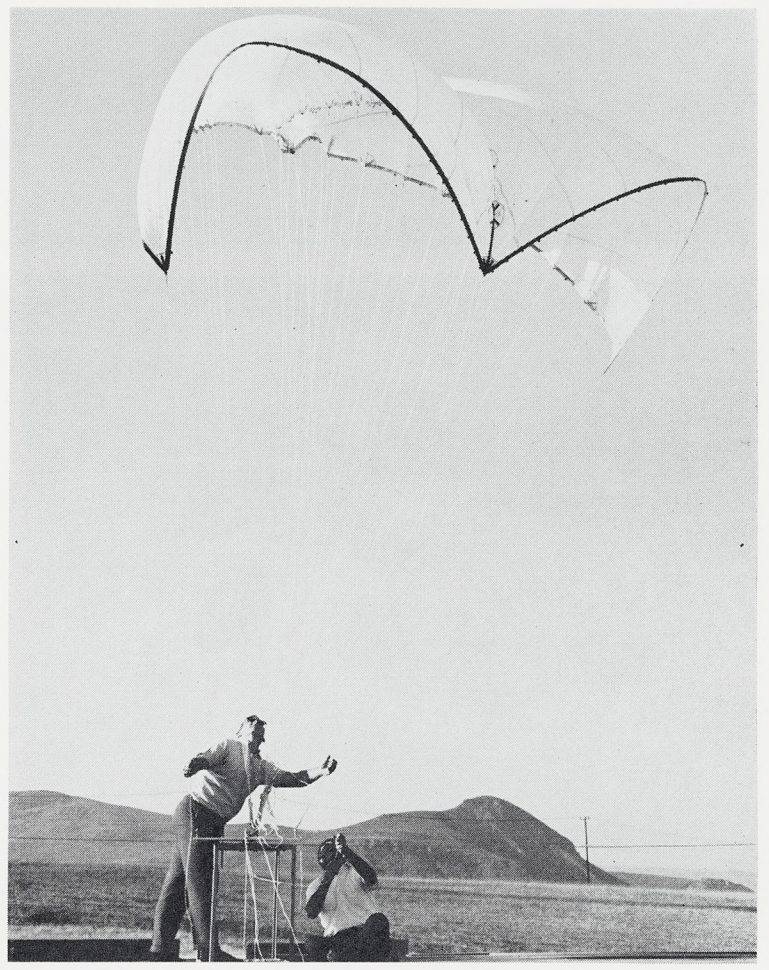
As an indication of the volume of work which must be done, consider the September schedule alone. Parawing tests were scheduled on September 6, 12, 18, 24 and 30. MQM-74A tests were scheduled for September 13, 17, 19, 24 and 26. And the Apollo was scheduled for September 12.

Mr. Wagoner holds a bachelor of science degree in mechanical engineering from Stanford University. He joined Northrop Ventura in 1964.



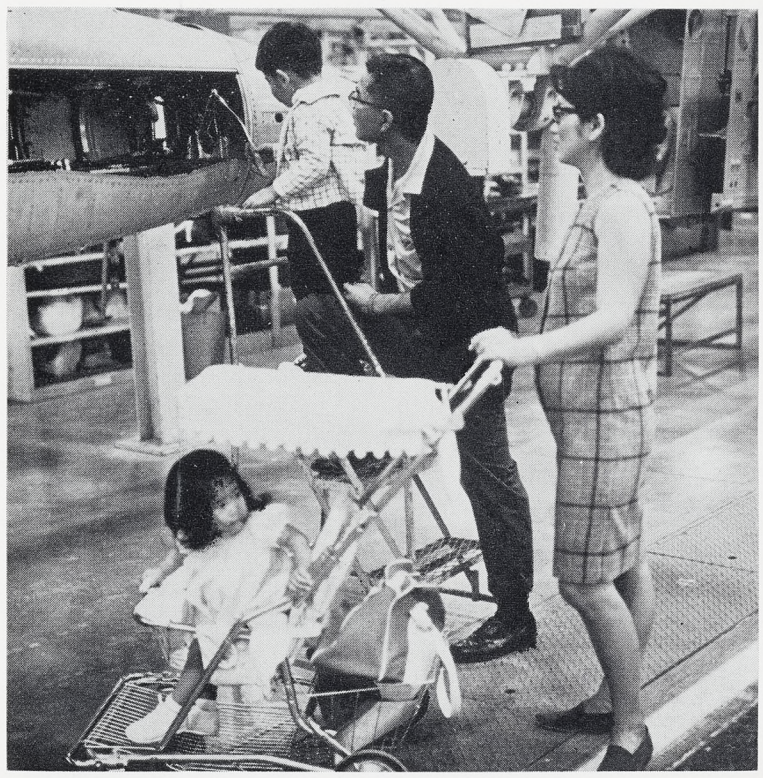
TESTING, TESTING—Hillis Wiley and Bob Vogt (above) prepare a Northrop Ventura MQM-74A vehicle for test flight at Point Mugu. Dale Thompson and Eugene Linhart (below) conduct a line length verification test in support of the Parawing program. Activities are typical of day-to-day work in support of three major test programs on key products.

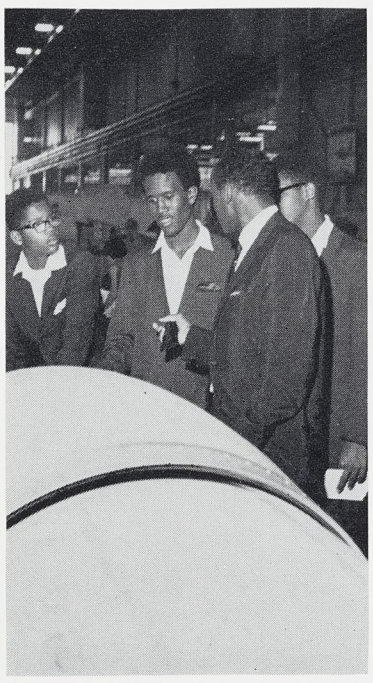




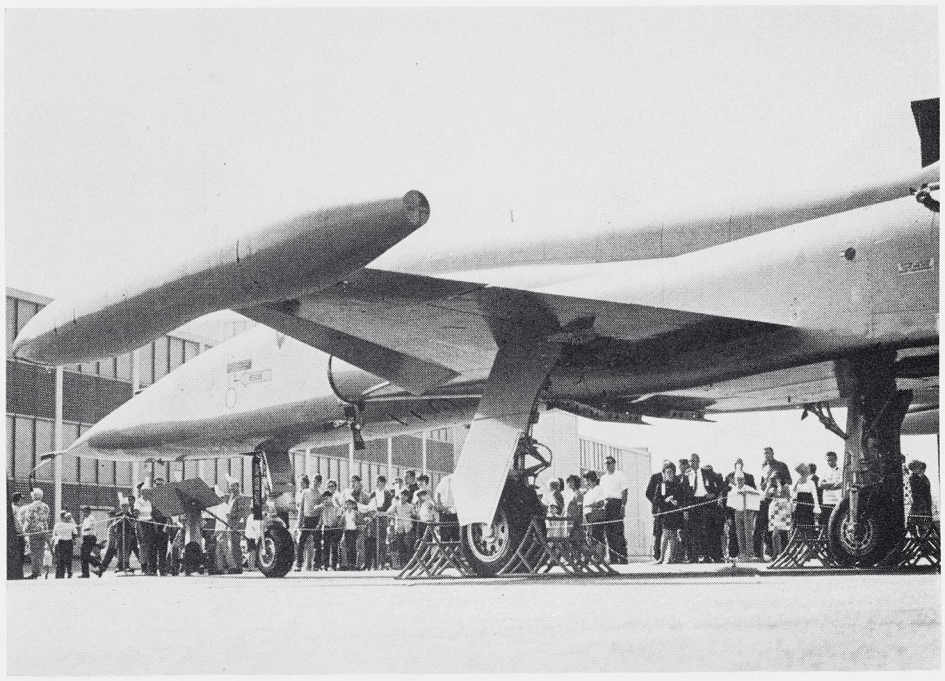
LOTS OF TALENT is required in conducting crucial field tests. Helicopter (above) lifts controllable Parawing aloft for drops and glide tests. Crew includes representatives of participating agencies and includes Dillon Cox, Lloyd Simpson, Wayne Beck, Lou Raiola, Eugene Linhart and Dick Roberts of Ventura. Apollo parachute retrieval team (left below) work in the desert near El Centro to straighten chute just used in tests. Men include Glen Boren, Hal Warren, Vick Matakas and John Morrison of Ventura. At El Centro (lower right) an Apollo test vehicle is under study following a drop from altitude beneath Ventura-built recovery system.

Thousands Tour Norair for Family Day Activities

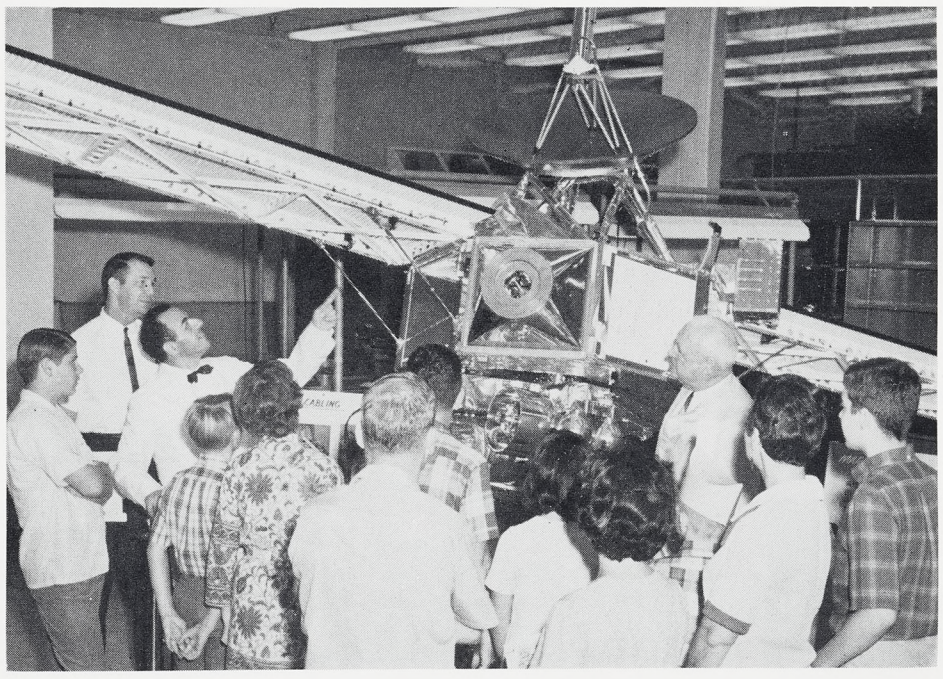


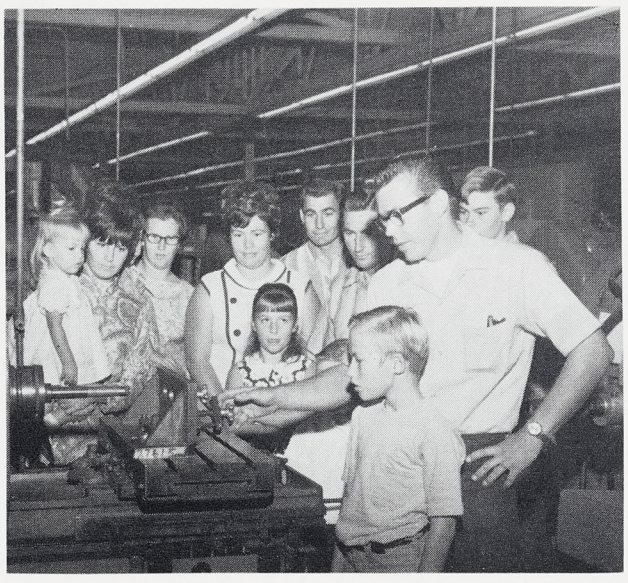


PHOTOS BY DAVE AND DAVID SALDANA, DICK ENGLER



Nortronics Hosts Families at Three Locations





PHOTOS BY DALE OLIVER AND WALLY BROWN

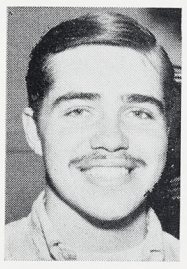
WHAT DO YOU THINK?

Do You Like The Idea Of Changing To and From Daylight Saving Time

Mrs. Savage

Alice Savage, blueprint clerk, Norair-Palmdale:

I'll stay with Daylight Time. The extra hour's sleep makes no difference once you get used to it. I like to go home when it is light and have more time before dark.



Mr. Gilbert

Jerry Gilbert, reproduction operator, Nortronics Anaheim:

I don't want to change back to Standard Time. I'm for keeping Daylight Time the year around. When we turn the clock back in the fall, it makes the evenings too short. It is dark by the time we leave work and there isn't time to do any work around the house.

Miss LaBart

Charlotte Marcum, secretary, Ventura:

I like the extra daylight in the summer. Really my reason is mostly because it gives me a chance to take my daughter to the park and spend more time with her. Also, it seems I can get more housework accomplished in daylight than in the dark.

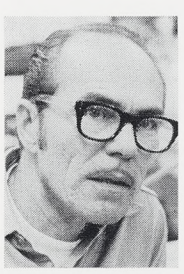
Mr. Blanco

Jose Blanco, foreman, Ventura:

No. It's very confusing and hard to get used to. It takes me about two weeks to get accustomed to the new hours.

Sue LaBart, clerk typist, Nortronics Hawthorne:

I like Daylight Saving Time. I'm an outdoor girl and DST gives me more time to do the things I want to do in the summer.



Mr. Priddy

Lee Priddy, model builder, Ventura:

I am an outdoor man and I do a lot of work in my yard that I can't do after dark. Also, I have been using the extra daylight to rebuild my garage into a den.

A CLOSE LOOK—Northrop's Venice Facility held open house recently for the families of those involved in training there. More than 125 turned out to tour the facility and to see where "Dad" works. Typical was the family group above.

POSSIBLE ANTIQUE

This Old Axe Is Not For Grinding

Michael Axe has found an old axe to grind. But, he won't be grinding it. If it turns out to be the antique he suspects, Mike will lend it to the curator of the Western Trails Museum at Knott's Berry Farm.

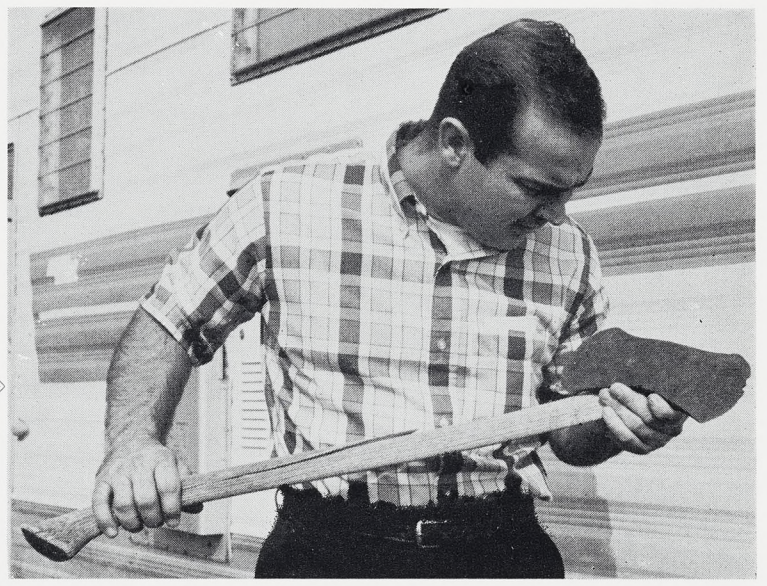
It all started when Mike, a Manufacturing technician in the printed circuit board area at Anaheim, was playing host to a "little brother" assigned to him under the Big Brother program.

The two were on a hunting outing in the hills outside of Wrightwood when Mike stumbled over an old axe handle half-buried in the shifting sands near the Cajon Pass.

After uncovering it, Mike discovered not only the swollen and weathered handle, but a double-faced axe head, corroded and dulled from age.

When he got his "treasure" home and inspected it carefully under the light, Mike could detect markings on the side of the steel blade. Using only a pencil eraser to prevent damage to the impression, he removed some of the rust and corrosion to reveal the letters CFF, followed by a square period.

Unofficial guessers believe the axe to be a "real find." However, Mr. Axe plans to obtain a professional opinion on the matter.



MR. AXE SURVEYS HIS 'FIND'

Merit Scholars Should Arrange For Tests Soon

High school juniors who are children of Northrop employees should inquire of their school advisers now about arrangements for taking the National Merit Scholarship Qualifying Test next February.

Northrop awards several college scholarships each year to children of employees. No special entry blanks are needed, and participation in the test serves as automatic application, but applicants must be juniors and must arrange during the fall semester to take the test.

Northrop Merit Scholars are chosen by the National Merit Scholarship Corporation from students who attain the finalist level on the basis of scholarship, leadership, and good citizenship as determined by testing and other procedures. No Northrop officer or employee plays any part in the selection of any merit scholar.

Each merit scholarship is a four year award, covering the undergraduate years. The amount of the scholarship is based on each student's financial needs in order to attend the college of his or her choice. The maximum amount yearly is $1,500, and the minimum is $250.

Further information regarding the scholarship program may be obtained from Stan Church, executive secretary of Northrop's University Relations Advisory Board, ext. 229 in Beverly Hills.

New Satellite Communication Station Opens

Central America's first earth station to communicate via satellite is now fully operational. It was designed and built by Page Communications Engineers, Inc., a Northrop subsidiary.

Located at Utive, Panama, the station launched traffic to Chile in early September, Europe in mid-September, and the United States, Mexico and Canada in early October.

"Latin America is now linked by sight and sound to nations throughout the world which have similar equipment," a Page official announced. "Businessmen and other Panamanians anywhere in the world will be able to communicate home in seconds."

Scott Burke Tops Field In Big Santana Regatta

Scott Burke, project supervisor, Engineering Check group, 747 program, had smooth sailing in the 1968 Third Annual Santana Class Championship Regatta. He outsailed 32 entrants to take the regatta championship.

Sailing a Santana III "Sparrow," a 22-foot midget ocean racer, Mr. Burke and his crewman, Ed Jenkins, placed first, second and thirteenth to win on points. Mr. Jenkins is a former Northrop Nortronics employee.

The annual boat race is jointly sponsored by Fleet 3, Pacific Mariners Yacht Club, and the Santana One-design Association.

Mr. Burke has been sailing yachts for 20 years. He was formerly employed at Northrop Ventura, but in 1960 he went to the Virgin Islands. For two years he operated his own boat charter service for tourist pleasure tours. In 1962 he returned here to work for Northrop Norair.

'Fall Fling' Ducats Are Still Available

Tickets to NRC's final dance of 1968, a Fall Fling, November 9 at the Mayflower Ballroom, Inglewood, are still available at Personnel Activities outlets. They sell for $1.50 per person.

Jimmy Talbert and his orchestra will play for dancing. Social hour begins at 8:30 p.m.; dancing at 9:30 p.m. Casual dress is suggested.

CHAMPIONSHIP FORM—Skipper Scott Burke of Norair is at the tiller as his Santana III speedster, "Sparrow" maneuvers during annual Santana Class Championship Regatta. Mr. Burke and crewman Ed Jenkins garnered sufficient points to take the championship over 32 other entries. Photo by Beckner, Balboa.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Pickup, 1956 Ford, incl. '58 283 Chev. eng. comp., $800. 213-429-1114. A

Ford, 1934 coupe, 3 windows, $525. 213-836-0068. A

Pontiac, 1964 Bonneville convt., all power, $995. 213-545-4015. A

Oldsmobile, 1961 Super 88 Holiday, 4-dr. h/top, all power, auto. trans., $325. 213-371-2862. A

Oldsmobile, 1967 Cutlass Supreme, 4-dr. h/top, p/s, p/b, r/h, auto. trans., a/c, $2,500. 213-327-0883. A

Chevrolet, 1967, Camper Van, 283 V-8, std. trans., $2,300. 213-672-4231. A

Volkswagen, 1954 Sunroof, $300. 213-377-5762. A

Pickup, Ford, 4-spd., reblt. 292 V-8, w/or without cabover camper, $1,100. 213-830-4265. A

Mercury, 1957, reblt. trans. & eng., $75. 213-677-8726. A

Oldsmobile, 1960, 2-dr. h/top, p/s, r/h, a/c, $400. 213-674-0152. A

Volkswagen Camper, 1968, deluxe model w/ pop-top, extras, $3,250. 213-722-0668. A

Dune Buggy, reblt. '61 VW eng., fiberglass body, $1,175. 213-674-9515. A

Ford, 1968 Galaxie, 2-dr., Landau top, p/s, r/h, auto. trans., 390 eng., w/2 bbl. carb., $2,800. 714-549-3190, 213-673-3676. A

Ford, 1951, auto. trans., $100. 213-377-4146, 213-377-8898. A

Mercury, 1961 Comet, reblt. eng., $350. 213-865-0197. A

Chevrolet, 1957 Nomad, chrome rims, flr. shift, p/s, p/b, $600. 213-370-0594. A

Valiant, 1962, 4-dr., r/h, $395. 714-828-9256.

Buick, 1963 Special, a/c, p/s, V-8 eng., 4-dr., $725. 213-322-0884. A

Triumph, TR-3 roadster, wire whls., o/drive, new Koni shocks, $1,050. 213-674-6955. A

Chevy II, 1962 Nova 400, p/b, p/s, r/h, $600. 213-679-4389. A

Buick, 1962 Le Sabre, 4-dr. h/top, p/b, p/s, r/h, $400. 213-630-5705. A

Comet, 1961 2-dr., 6-cyl., stick, $225. 213-374-8358. A

Chevrolet, 1961 Impala, h/top, p/s, 2-dr., $695. 213-370-6896. A

Volkswagen, 1965, all access., $1,150. 213-596-0521. A

Plymouth, 1968 Sports Fury, 2-dr. h/top, p/s, auto. trans., air, 440 eng., $3,195. 714-635-5304. A

Caravelle, 1967 convt., with h/top, $1,350. 714-893-2071. A

Comet, 1966 Cyclone, 200 h.p. V-8, r/h, auto. trans., extras, $1,750. 714-826-3631. A

Chevrolet, 1961 Bel Air, sedan, 8-cyl., $300. 714-774-8636. A

Pontiac, 1961 Bonneville, sport cpe., p/s, p/b, $600. 213-377-7317. A

Mustang, 1961, V-8, auto. trans., r/h, p/s, p/b, $2,195. 213-927-7683. A

Mustang, 1966 6-cyl., 3-spd. stick, $1,350. 714-548-5222. A

Cadillac, 1959 sedan DeVille, a/c, full power, $475. 213-828-3268. A

Econoline Van, 1962 Ford, $595. 213-377-3563. A

Austin Healey, 1960 Sprite, $300. 213-641-1259. A

Chevrolet, 1965 Impala convt., 327 eng., p/s, auto. trans., r/h, $1,400. 213-731-1003, 213-733-1875. A

Ford, 1958 Fairlane, $50. 213-545-5045. A

Cougar, 1968 XR-7 GTE, 427 cu. in. eng., auto. trans., p/s, disc brakes, $3,735. 213-394-7925. A

Volvo, 1966 P544, r/h, $1,595. 213-679-9730.

Oldsmobile, 4-dr., 1963 Dynamic 88 Deluxe, p/b, p/s, radio, $650. 805-495-8515. A

Oldsmobile, 1963 Super 88 Holiday, 4-dr., a/c, p/b, p/s, $875. 213-375-3914. A

Chevrolet, 1958, 4-dr., auto., p/s, $325. 213-675-6963. A

Dodge, 1964 Dart GT, 4-spd., radio, $775. 213-372-5367. A

Pontiac, 1962 Grand Prix, all power, a/c, $850. 213-754-3914. A

Volkswagen, 1962, r/h, $800. 213-431-5464. A

Dune Buggy, 700 lbs., constructed from late model VW parts, $950. 213-396-6739. A

Karmann Ghia, 1960, 1600 cc motor, extras, $1,200. 213-672-7424. A

Ford, 1964 Galaxie 500, 365 h.p., p/s, $750. 213-644-1531. A

Falcon, 1965 Sprint, r/h, p/s, fact. air, auto., $1,475. 213-925-9776. A

Jeep, Wagoneer, 1963, 4-wheel dr., 6 cyl., auto. trans., $1,600. 213-482-3118. A

Volkswagen, 1955, new trans., reblt. eng., access., $600. 213-632-1346. A

Automobiles For Sale

Falcon, 1963 Futura, V-8, 4-spd., 2-dr., $700. 213-375-1902. A

Corvette, 1962 2 4-bbls., 4-spd., 327, $1,400. 213-323-7509 days. A

Household Items For Sale

Divan, makes into dble. bed, $25. 714-774-2779. B

Matiress & box spring, 1 dble., 1 single, $45. 213-823-1910. B

Trundel Bed set, provincial maple, $30. 213-479-5653. B

Coffee Table, blonde, w/matching corner table, 2 end tables & table lamps, $45. 213-678-6492. B

Sewing Machine, antique, treadle-type, $30. 213-379-4356. B

Coffee Table, Lane Mfg., oiled walnut, 6' long, $40. 213-377-9666. B

Refrigerator, Philco, $15. 213-374-5133. B

Stove, G.E. elec., $100. 213-675-7025. B

Coffee Table, set, Danish modern, w/2 end tables, 2 lamps, $40. 213-865-2334. B

Dinette Set, 5-pc. Daystrom, $30. 213-371-4919. B

Freezer, upright, 20 cu. ft., 2 yrs. old, $90. 805-498-2572. B

Mattress, king size & twin box springs, $35. 213-675-7381. B

Dinette Set, 4 chairs, 5 yrs. old, $15. 714-524-2837. B

Corner Table, walnut, & record cabinet, $30. 213-325-4737. B

Sofa, 6½', & high-back chair, 2 mos. old, burnt orange, $160. 213-370-5230. B

Dressing Table, child's, $10. 213-325-3724. B

Bedspread, dble., Italian import, yellow & white cherub pattern, $35. 213-462-8044. B

Dishwasher, portable, G.E., white, 1½ yrs. old, $95. 213-645-5786. B

Mangle, Ironrite, $25. 805-527-1824. B

Vacuum Cleaner, Hoover Dial-A-Matic, 2 yrs. old, $25. 213-675-0788. B

Headboard, bookcase type, twin size, & frame, $20. 213-755-1071. B

Rug, 9 x 12 gold shag, less than 1 yr. old, $100. 213-633-3657. B

Bathinette, $5. 213-376-4831. B

China, Wentworth, silver wheat pattern, service for 8, extras, $75. 213-676-6303. B

Breakfast Nook, L-shape, w/electrical outlet, pedestal table, gray, $50. 213-692-6336. B

Washer & dryer, $60. 213-677-2789. B

Crib & mattress, Lullaby & Kantwet, natural finish, $20. 213-378-2965. B

Stove, gas, coppertone, Wedgewood, 2 yrs. old, $75. 213-343-3579. B

Beds, twin, mattresses, $25. 213-831-2878. B

Bedroom Set, 9-pc., incl. twin box springs & mattresses, $85. 213-753-7484. B

Miscellaneous For Sale

Cemetery Lots, 4, fully improved, Terrace of Faith, Rose Hills, $225 ea. 213-867-0662. C

Player, stereo, Lear Jet, 8-track, for auto, $70. 213-830-6163. C

Acreage, 10 acres, in Oregon Recreational Land, near Klamath Falls, $2,600. 805-498-2668. C

Bellyboard, ¾" redwood stringer, $20. 213-869-6759. C

Train Layout, H.O., approx. 60 cars & misc. equipment, mounted on 4'x10' panel, $85. 213-291-0025. C

Lens, 1:4/135mm Isconar Gottingen telephoto, $20. 213-327-4267. C

Airplane, Cessna 140, all metal, 270 hrs. s.m.o.h., 2 radios, $2,350. 213-839-6084. C

Hydroplane, 8'2", w/access. & 10 h.p. motor, $450. 213-676-9518. C

Gun Cabinet, holds 7 guns, $30. 213-378-3055. C

Amplifier, Gibson Hawk, 2 10" spkrs., tremolo, reverb., $160. 213-321-4801. C

Hi-Fi Components, Heathkit, 25 w. amp., F4-FM tuner, $75. 213-326-5566. C

Ping Pong Table, set, $17.50. 213-324-4817.

House, 3-bdrm., 2 baths, view, 18'x38' pool, P.V. Pen., $43,800. 213-377-6029. C

Chain Saw, 7½ h.p., $150. 213-532-6109. C

Lot, ½ acre, in Joshua Tree, Calif., all utilities avail., $3,500. 714-531-3840. C

Home, 3-bdrm., 1¾ baths, f/place, b/wall, sprinklers, enc. patio, 5 min. to Norair, $3,800 dwn. & assume $22,800 loan at 6¾%, $26,600. 213-327-8289. C

Camera, Kodak Instamatic, model 154 for color, w/film, $22. 213-371-6328. C

Motor Scooter, Allstate Puch, $95. 213-377-1074. C

Home, 4-bdrm. & family rm., 1½ baths, screened-in patio, $3,100 dn., $31,000. 213-635-9944. C

House, 4-bdrm., enc. front & backyard, P.V. Pen., $42,500. 213-377-9716. C

Drum Set, Slingerland, w/access., cymbals & covers, $150. 213-323-7177. C

Pups, 7 Samoyed, 6 wks. old, AKC reg., males, $100 ea.; females, $75. 213-670-5421.

Camera, Polaroid 100 & case, $60. 213-675-7729. C

Train, 10 cars, track on board w/casters, $50. 213-371-8695. C

UHF Converter, Blonder tongue, $10. 213-371-3615. C

Acreage, 2 acres, in Sand Canyon, lge. oak trees, $24,000. 213-675-4156. C

Ham Gear, Motorola 80D series, 2-meter FM transceivers, $75. 213-641-0609. C

Miscellaneous For Sale

Camera, Swinger Polaroid Land Mod. 20, $12. 213-328-5655. C

Golf Clubs, set, Spaulding, Sunday bag & balls, $40. 213-826-3061. C

House Trailer, completely furn., at Mammoth Mtn., $350. 213-545-6114. C

Cemetery Lots, Inglewood Park Pacific Slope, dble. interment, $1,100. 213-324-5140. C

Camper Boot, fits 1960 to 1966 Ford pickup, $20. 213-534-0840. C

Lot, ½ acre, Apple Valley, w/utilities, $150 dn., $25 mo., $1,995. 213-328-7048. C

House, Huntington Harbor, corner lot, 3-bdrm., 2 baths, 2,000 sq. ft., bltins, cpts., dps., 4 yrs. old, $89,500. 213-592-5248. C

Tropical Fish & equipment, $220. 213-425-6977. C

Lot, Lake Elizabeth, 50'x101', lifetime club membership, $2,500. 213-482-7026. C

Lot, Lake Elizabeth, paved street w/electricity & water, 10% dn., $4,150. 805-947-8389. C

Bar, handmade, semi-circular, walnut finish, w/black formica top, $150. 213-379-4572. C

Boat, inbd., 1957 Hemi-Head DeSoto eng., steel trailer, $900. 213-644-4234. C

Interest, ¼, in 1957 Cessna 182, $1,700. 213-638-7463. C

Barbell Set, 165-lb., $25. Box 2101. C

Trailer Hitch, Eaz-Lift, 600 lb. cap., non-removable head, w/torsion bars & support structure, $35. 213-429-7879. C

Riding Boots, size 3 English-made, girl's, w/brown velvet hat, $50. 213-377-8609. C

Home, lge. 2-bdrm., English stucco, 3 miles from Northrop, Inglewood area, $20,950. 213-752-4576. C

Pistol, Colt .45 Commemoratives Chateaux Therry & Belleau Wood, w/instructions for follow-ons, $525. 213-675-8617. C

Surfboard, 9'6" Dewey Weber, $50. 213-676-0049. C

TV, Zenith portable, w/cart, 10"x14" screen, $40. 213-672-4447. C

Phonograph, RCA stereo, 4-spd. w/diamond stylus, det. speakers, portable, $50. 213-756-3472. C

Motorcycle, 1966 Triumph Bonneville, 650 cc, $900. 213-363-3843. C

Surfboard, Weber, $50. 213-645-1075. C

House, 5-room, heated 15'x35' pool, lge. yd. cemented, b/wall, near Northrop, new roof & cpts., will G.I., $27,500. 213-679-4778. C

Sailboat, 28' sloop, sleeps 4, inbd. eng., main, jib, genoa & spinnaker, $5,000. 213-378-4352. C

TV, 23" RCA, b&w, console, $30. 213-421-1300. C

Trailer, 17' Terry, new int., floor heater, butane/elec. refrig., jacks, $650. 213-326-9107.

Lawnmower, gasoline, $45. 213-374-4944. C

Sailboat, Naples Sabot, new mast & boom, dacron sail, fibreglass hull, $200. 213-439-6432. C

Stereo System & components, $200. 714-523-2495. C

Wig, black, block & case, $30. 213-327-2447.

Vacuum Cleaner, Kirby, recond., all attachments, $35. 213-675-7403. C

Keg Bar, Tapking, ¼ keg, Peerless & Golden Gate sys., $125. 213-375-9815. C

Home, 5-bdrm., 3-car gar., central a/c, undg. util., 600 sq. ft. brick & redwd. patio, landscaped, sprinklers, fences, dps., near Northrop Ventura, $38,500. 213-889-8075. C

Ping Pong Table, ¾" top, alum. frame w/ folding legs, $20. 213-673-1249. C

Cemetery Lot, single, Inglewood Park, Park View sec., $450. Box 2102. C

Accordion, black, Castle semi-pro, 120 bass, $175. 213-324-6770. C

Boat, 14' glass, 25 h.p. elec. motor, canvas top, trailer, $600. 213-328-1080. C

Cement Mixer, ½ bag, elec., $40. 213-374-7760. C

Sailboat, 12' glass, dacron sails, anodized mast & boom, $395. 714-592-5039. C

Wedding Dress, Cahill gown, ivory brocade, chapel length train, empire style w/veil, $60. 213-679-4241. C

Camera, 35mm, Canon fp 1.2, interchangeable lens, w/leather case, $100. 213-884-1892. C

Typewriter, Remington elec., w/hvy. duty stand & pad, $215. 213-676-3050. C

Pups, German shepherd, $35. 213-675-3725. C

Mini-Bike, 8 h.p. West Bend, $135. 213-393-5649. C

Sailboat, Cal 20, complete, $2,350. 213-375-4891. C

Sink, for bath rm., round, w/pop-up faucet set, $15. 213-675-7316. C

Pups, Scottish terrier, 5 wks. old, AKC reg., $125. 213-671-1660. C

Torches, oxygen-acetylene & regulators, $75. 213-328-2932. C

Motorcycle, 1967 Honda 305 Scrambler, many extras, $600. 213-371-0194. C

TV, Admiral portable, 19" b&w, w/UHF, $50. 213-867-5809. C

Home, tri-level w/pool, cabana, 3-bdrm., 2 baths, det. gar., fenced, landscaped, 15 min. to Norair, $31,500. 213-372-6830. C

House, 2-bdrm. & den, det. gar., lge. fenced yd., Culver City, $26,950. 213-883-0430. C

TV, 1967 Magnavox, 24" b & w, remote control, $150. 213-696-9438. C

Tuner-Amplifier, Pilot, FM multiplex, 70 w. per channel, solid walnut cabinet, $125. 213-823-1952. C

Typewriter, Remington std., pica type, $45. 213-754-6146. C

Miscellaneous For Sale

Home, 4-bdrm., 2 baths, f/place, patio, 2½-car gar., bltins, close to 3 freeways & beach, terms, $26,500. 714-962-0062. C

Acreage, 5 acres, Antelope Valley, $49 dn., $49 mo., no int., $4,900. 213-378-1026. C

Lot, Green Valley Lake area, 60' x 275', lake share incl., $3,500. 213-833-4191. C

Radial Arm Saw, Sears-Craftsman, 9½", homemade stand, $65. 213-676-0400. C

Outboard Motor, 20 h.p. Mercury, 10 hrs. use, w/17' boat & trailer, $250. 213-542-3990. C

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., trailer, $800. Box 2103. C

Engine, 368 cu. in. Lincoln, reblt., & Fordomatic trans., access., $500. 213-676-3095. C

Skis, Head Standard, w/bindings, 185 cm long, $60. 213-794-6340. C

Piano, spinet, antique fruitwood finish, $750. 213-377-4749. C

Slide Magazines, Airequipt circular, for Airequipt slide projectors, $1.25 ea. 213-325-9492. C

Bowling Ball, bag, glove & men's shoes, size 7½, $24. 213-377-3806. C

Motorcycle, 1964 Yamaha, 80 cc, $215. 714-494-6940. C

Pistol, 9 mm auto., holster & extra clip, Astra model 600/43, $50. 213-785-6142. C

House, 3-bdrm., fam. rm., 1¾ bath, screened patio, 5 min. from Northrop, $27,500. 213-677-0540, 213-677-6388. C

House, 3-bdrm., 1¾ bath, cpts., dps., corner lot, block fence, patio, det. dble. gar., No. Torrance, $27,000. 213-371-1935. C

Home, Palos Verdes Pen., 4-bdrm., 2 baths, 8 yrs. old, G.E. 5¼% financing, $38,000. 213-676-5425. C

Truck Engine, 1955 Chev., 6-cyl., complete, $75. 213-838-5810. C

Boat, 21', 90 h.p. Johnson outbd., marine ply/glassed, Walstrong trailer, $1,750. 213-676-4050. C

Mini Bike, 6 h.p. West Bend eng., $95. 213-378-5856. C

Shotgun, o/u, 28" mod. & full, $160. 213-532-7846. C

Radio, for VW, Bowman 5 pushbutton AM, $30. 213-327-9338. C

Motorcycle, 1967 Triumph T100C, 500 cc Scrambler, $850. 213-545-3972. C

Motorcycle, 1966 BSA, 650 cc, $800. 213-327-3415. C

Luggage Rack for VW only, $10. 213-860-3450. C

Encyclopedia, Americana, 30 vols. & children's books, 10 vols., bookcase, 3 yrs. old, $150. 213-632-3623. C

Camper, 1960 Romer cabover, 10', butane refrig., sleeps 6, $600. 213-457-9186. C

Xylophone, Deagan, $125. 213-329-5364. C

Playpen w/pad, $15. 714-529-4788. C

Wanted to Buy

Jaguar roadster, 1955 or '56, any condition. 714-772-1975. D

Refrigerator, in good condition, up to 5 yrs. old, from $50 to $100. 714-637-3265. D

Doghouse, medium size. 213-320-6685. D

Refrigerator, in good condition, w/lge. freezer compartment, up to $50. 714-548-0308. D

Shop Manual for 1963 or 1964 Pontiac. 213-756-9697. D

Lathe, jeweler's, collets & accessories. 213-377-2200. D

For Trade

Chevrolet, 1962 V-8, 2-dr. h/top, r/h, p/s, trade for a VW bus. 213-671-0694. E

Free (To Be Given Away)

Antenna, for ham radio, approx. 50' tall. 213-276-1336. F

Dog, German short-hair pointer, 2 yrs. old, to good home w/children. 213-634-4766. F

Kittens, black & white, short hair, 8-wks. old. 213-377-3180. F

Rentals Offered

Working Woman wanted to share 2-bdrm. house, newly furn., Manhattan Bch., $85 & ½ utils. 213-372-6371. G

Apt, 2-bdrm., furn., cpts., dps., lge. rms., 4 short blocks to Northrop, incl. all utils., $165 mo. 213-833-2512. G

House, 3-bdrm., family rm., f/place, 1¾ bath, bltins, close to Norair, $250. 213-676-3057. G

Man to share lge. house, furn., w/single owner, Huntington Bch., $150 mo. 714-962-4202. G

Apt, 1-bdrm., cpts., dps., bltins, all elec., 5 min. to P.V., 20 min. to Hawthorne, $110, unfurn.; $130 furn. 213-375-9397, 213-375-2091. G

House, unfurn., 2-bdrm. & den, adults, no pets, Inglewood, $150. 213-677-0621. G

House, 2-bdrm., 2 miles from Norair, avail. November 1, $140 mo. 714-595-3013. G

Apts, unfurn., near ocean, cpts., dps., bltins, 3-bdrm., 2 baths, $180; 1-bdrm., $125. 213-372-8835. G

Cabins, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Cabin, Big Bear Lake, sleeps 9, $25 w/end. 213-867-0662. G

House, cpts., gar., fenced rear yd., Hawthorne, $145 mo. 213-325-5705. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Arlington & Carson, Torrance. N. A. Williamson, 213-328-6839.

From Huntington Beach Area, D. E. Rowe, Norair ext. 4624, 714-968-4120.

7:24 a.m. — 4:06 p.m.

Moorpark & Thousand Oaks, Newbury Park. Domenica Rochelle Licata, Mariposa ext. 4086, 213-754-4510.

8 a.m. — 4:45 p.m.

Wilshire Blvd. & Selby, Westwood. Celia Alper, Norair ext. 1034, 1035. 213-474-5644.

Rides Offered

7 a.m. — 3:42 p.m.

From Huntington Beach Area, D. E. Rowe, Norair ext. 4624, 714-968-4120.

Rentals Wanted

House, unfurn., 2 or 3 bdrms., 1½ baths, cpts., adults, $175 mo. 213-323-1580. H

Child Care

Child Care offered, ages 1½ & up, fenced yd., hot lunches & snack, close to Northrop. 213-676-8915. I

Child Care offered, Hawthorne area, my home, during day. 213-676-7338. I

Child Care offered weekiy, prefer ages 1-3. 213-374-6857. I

Child Care offered, my home, fenced yd., toys, meals. 213-542-2795. I

Personals

Anyone witnessing rearend collision on El Segundo at Vermont Sept. 11 at 6:30 A.M. please call ext. 1825. L

Working Girl wanted to share my home, lge. bdrm., kitchen privileges, in Garden Grove. 714-539-0339. L

I wish to express my sincere thanks to all concerned with memories of my convalescence recently. C. E. DONALDSON. L

I wish to express my deepest appreciation to my friends who made my retirement from Northrop such a happy time & a lovely thing to remember. Thank you. POLLY CUENOD. L

I wish to thank all my friends at Northrop for their cards & expressions of kindness at the recent loss of my mother. RORI NORDHAUSEN. L

I wish to thank all my friends, & associates for their kindness to me on my retirement & gifts. MARGARET C. PAULOS. L

Thanks to my wonderful friends for the many cards, flowers & phone calls during the aftermath of my "Toyota Travels." Looking forward to being home. PAT CALLAWAY. L

Sincere thanks to all my Northrop friends for their many cards & kindness at the recent loss of my father. CARMELA MONIELLO. L

My sincere thanks to my many friends for their expressions of sympathy in the recent loss of my wife, Leona. W. G. WILLIS. L

I want to thank my many friends at Nortronics Anaheim for the radio which I have received as my going away gift. EVELYN KOVACHEK. L

For Sale or Trade

TV, 1967 Motorola, 16" portable, $75 or trade for AM-FM tuner of comparable quality & value. 213-370-9800. M

Rug, 12'x13', beige wool, w/pad, $55 or trade for vacuum cleaner or maple coffee table. 213-644-7179. M

Pistol, pr., Western 45 cal. Colt, & quick-draw holsters, $200 or trade for motorcycle. 213-531-9026. M

Organ, Capri, elec., 24-chord, 37-key keyboard, $30 or trade for small wooden desk. 213-376-3533. M

Mattress, twin size, foam rubber, never used, $27.50 or trade for 2" micrometer. 213-329-6728. M

Pickup, 1964 Ford, ½-ton, V-8, r/h, $1,150 or trade for equivalent value Volkswagen, Toyota or Datsun. 213-377-1404. M

Radio, Motorola FM, 12 volts $40 or trade for old or modern revolver 32 or 38 cal. 213-292-6360. M

Range, Thermador bltin-type, elec., complete, $50 or trade for pistol, shotgun or big bore rifle. 213-322-5136. M

Barber Shop Song Fest At Reseda

"Those Wonderful Days Gone By," a program of barber shop quartet and old time chorus singing, will be recalled for an evening on November 2 in Reseda.

The Reseda Valleyaires, including two Northrop Ventura employees, will present the program.

Carey Buhler, Parawing project engineer, and John Lawrence, Design supervisor, are members of the Reseda Chapter of the Society for the Preservation and Encouragement of Barber Shop Quartet Singing in America.

Tickets for the performance are available from Mr. Buhler, ext. 532 or Mr. Lawrence, ext. 685. Prices are $3 and $2.50.

JAN MURRAY, Anaheim department, explains the payroll deduction method of buying bonds to new employee Danny Apdyke. Similar work by personnel clerks at other Nortronics facilities has resulted in 87 per cent of all Nortronics new hires subscribing to the bond program.

EIGHTY-SEVEN PER CENT

New Employees Favor Savings Bonds

Eighty-seven per cent of all Northrop Nortronics new hires are subscribing for U.S. Savings Bonds under the payroll deduction plan, a check of records for the 12 months ending September 30 revealed.

All Nortronics facilities new hires for this period totaled 1,273 with 1,109 signing up for bonds, according to Harry Clark of Employee Services at Hawthorne. Mr. Clark emphasized that the 87 per cent achievement was not set as part of any concentrated drive or goal. It was done through the routine practice of explaining the Savings Bond Program to new employees.

"We can attribute it directly to the enthusiasm of the personnel clerks who interview newcomers to our Northrop family," Mr. Clark said. "The Navigation department was 100 per cent in signing up new employees during these 12 months. The other Nortronics personnel clerks also did a splendid job as the 87 per cent record shows."

Personnel clerks responsible were Kay Anderson, Sue Mitchell and Dell Wyatt at Hawthorne; Jan Martin and Ann Dean at Anaheim; Lore Krumreich at NSL and Joan Jones at Palos Verdes.

Seminar Develops Art of Management by Objectives

Twenty-four members of Northrop Nortronics management were selected to attend the three-day seminar introducing the management - by - objectives style of leadership.

The seminar, held October 17-19 at Lake Arrowhead, was presented by John Van de Water and Associates. It was an extensive presentation of effective goal writing, planning and implementation techniques.

Effective delegation and communication was stressed. Also the relationship of the individual member to his department.

Guest speakers at the seminar were Frederick Stevens, vice president and Nortronics general manager; Ross Miller, assistant general manager and Nortronics vice president, and Dr. V. W. Howard, vice president and manager, Northrop Systems Laboratory.

Additional seminars are scheduled for November and December. The seminars are presented through the Nortronics Management Development office to instill a style of leadership throughout the division where goals are clearly stated, quantified, communicated, and followed through. Goals taught in the seminar encompass those for business, development of personnel, development of self, and development of the corporate perspective.

Twenty-One Men Get Red Cross Certificates

Red Cross Training certificates were recently presented to employees who completed the three standard 10-hour courses conducted in-plant at Northrop Nortronics.

James M. Ricketts, acting manager, Anaheim department, made the presentation. Those receiving certificates, as shown in the accompanying photograph, left to right, standing are: Ellie Lingle, Roy Hollingsworth, Bill Adams, Ralph Jenkins, Dan Mallow, Jim Hock, Dave Belcher, Bob Patterson, Sal Del Grosso, Al Goodale, Leo Plinski, Bill Risher, J. Fitzpatrick, Bill Chestnut, and Riley Eledge.

Front row, Hugh Zerbarth, Don Schneider, Bill McNabb, Mr. Ricketts who made the presentations, "Rescue Annie" the dummy used as a course training aid, Bert Beard, Adrian Swanson, M. Campbell, and Wayne Hardy, instructor.

Not shown are Earl Chambers, Gene Weber, Ward Young, Bill Tucker, Bud Latchford, H. Gloor, Wilson Walker, Lee Gough, Dan Hudson, and Harold Moore.

Twenty-two of the attendees were supervisors and nine are emergency crew personnel.

Mrs. Ruth Goyne, volunteer instructor from the Red Cross, trained the emergency crew.

WINCON WILL DRAW TOP MEN IN FIELD

WINCON — the 1969 Winter Convention on Aerospace and Electronics Systems — is the West Coast's best forum for the exchange of technical information between educators, industry and the military services, according to Lloyd K. Jensen of Northrop Nortronics.

Mr. Jensen is assistant to the WINCON general chairman Frederick Stevens, vice president and Nortronics general manager.

"WINCON, to be held from February 11 to 13 at the Biltmore Hotel in Los Angeles, will bring together the nation's top men in the aerospace and electronics fields," Mr. Jensen said. "They will discuss problems, new developments and future trends."

Mr. Jensen added that the convention's bringing together more than 4,000 leaders in engineering and management will help broaden current technological thinking.

"It will give us an opportunity to get technology out of the laboratory and to put it to work for the benefit of all," Mr. Jensen said.

All NORAID Officers Are Re-Elected

The board of directors of NORAID, Inc., Northrop Corporation's in-plant charitable organization, has re-elected its 1967-68 officers and welcomed five new board members to serve for the coming year.

John Richardson, president; Marie Tully, vice president and secretary; and Ernie Boren, treasurer, are the officers. Rudy Rivero, accountant, and Mrs. Tully, NORAID administrator, were also re-appointed.

Mr. Richardson is also chairman of the board of directors that includes Lloyd Balsam and R. L. Gibney of Nortronics, Ward Dennis of the Corporate office, and R. M. Cooper, Norair, as returning members, plus new members Frank Mathes, Paul Jacobs, Sal Xifo, Cleve Fowler and Dan O'Halloran of Norair.

Re-ratified to serve for another year were all key facility committee members.

Norair's Hawthorne committee is chaired by James Schofield and includes Lucianne Clack, Bill Hayman, George Johnson, F. J. McLarney, R. W. Robinson, Jo Roth and J. H. Toms.

The Nortronics Hawthorne-Palos Verdes committee is chaired by Harry Clark and includes Roland Gagon, Jean Schaefer, Hollis Smith and Donald Weaver. The Nortronics Anaheim committee, chaired by Harry Belcher, includes William Carey, Carl Jensen and Sally Moore.

Norair's Palmdale committee comprises Tom Post, chairman, Eutha Dame and W. W. White. The Edwards AFB-JPL committee is co-chaired by Kelly Burke and L. R. Weltz and includes Frank Ramme and Frank Harrison.

BOB PECK PORTRAYS 'MR. SCRIBBLE'

ART CLUB EXHIBITS

Thousands View Art Show

Fifteen thousand visitors viewed works of NRC Art Club members at the Sixth Annual Palos Verdes Art Festival, October 13.

The show, sponsored by the Palos Verdes Art Association, was held on the grounds at Nortronics Palos Verdes.

Northrop artists showing their work, which included 100 pictures in all mediums, were Harold Leff, art commissioner for NRC, Bob Peck, Ed Mosher, Art Wiseman, Bill Gray and Jack Flannagan.

Besides showing paintings, Mr. Peck entertained the youngsters as "Mr. Scribble."

According to Mr. Leff, the Palos Verdes show is the largest the club has participated in as a group. The annual exhibition is known as "Art for Fun(d)s' Sake." It is held each year to raise money for a cultural center.

Mountaineers Plan Grand Canyon Trip

Brian Lauffer of Norair's Flight Equipment group will be the featured speaker at the November 4 (7:30 p.m.) meeting of the Northrop Mountaineers scheduled for the Hawthorne Airport Building.

Tentative plans are now being made by the group for a 3-day bus trip to the Grand Canyon area over the November 7 weekend. Activities will include hikes for various groups ranging from experienced backpackers to those interested in scenery and an outing. Contact Ken Ferrell, ext. 2001 at Norair, for information.

NORAID

(Continued from page 1)

for the first time, so it will be necessary for present contributors to sign new authorizations.

Suggested donations are based on "fair share" concepts starting at 12 minutes pay per week for those in moderate income brackets and ranging to slightly higher scales for personnel earning more. The donor reserves the right to designate deductions along this scale or to give a fixed amount.

The donor also may specify his contributions be used for any recognizable charity in any community within the United States, a unique feature of AID-UNITED GIVERS affiliation. Or he may simply give with the knowledge his contributions will go to help many organizations in the community in which he lives, based on our own Northrop formula. Those desiring to designate their funds to one or more groups, must use special forms for this purpose which must be updated each ensuing year.

"The AID - NORAID program gives us an opportunity to help both the community through the AID program and our own people through NORAID," Frederick Stevens, vice president and Nortronics general manager, said.

"AID-NORAID is a splendid way to assume our responsibility both to the community and to ourselves. It has been a Nortronics tradition to support programs which help those less fortunate and I hope we will continue our fine record. It is so easy to do through our payroll deduction plan."

GRADUATES OF A RED CROSS TRAINING PROGRAM GATHER AT ANAHEIM

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California | Vol. 26, No. 22 | November 6, 1968

Second Army Seminar Set Next Week

Northrop Nortronics Navigation department will hold its second Navigation Systems Seminar for the U.S. Army on November 12 through 14, according to Frank Merlino, seminar technical program coordinator.

"The seminar will be a repeat of the one held for Army Command personnel in June," Mr. Merlino said. "The previous one was so successful that the Army requested another so a larger number of its command personnel could become acquainted with the future potential of navigation systems."

The seminar will deal with navigation systems in broad prospectus. It will not be restricted to any particular system or systems. All types now in use will be discussed as well as promising systems for the future.

A portion of the seminar will be devoted to technological demonstrations. Attendees will tour various laboratories at the Navigation department, Hawthorne. Here they will see examples of Nortronics developed navigation systems and engineering capabilities.

Lloyd A. Jones, chief, Product Support, is seminar manager.

The hosts will be Leroy Kaufold, manager, Navigation department; A. G. Taie, director, Product Engineering; Dr. H. W. Schlitt, deputy department manager, Technical; A. B. Lipscomb, director, Marketing and Product Support; and Ed Rafnel, Army Systems Marketing manager.

'Funny Girl' Tickets

Reduced tickets are still available at all Personnel Activities outlets for the Northrop Theater Party to attend the November 16 showing of "Funny Girl" at the Egyptian Theater, Hollywood.

Regular $4 tickets are available at $3.20. The musical, based on the life of famed star Fanny Brice, stars Barbra Streisand.

LYNN D. COOPER, warehouseman at Nortronics Anaheim, is welcomed into the Wise Owl Club by James S. Penrod, director of Accounting. Mr. Cooper qualified in the club, sponsored by the National Society for Prevention of Blindness, when his safety glasses prevented a serious eye injury. He was disassembling a cabinet when a "frozen" nut broke loose and struck the right lens of his safety glasses.

FIRE FIGHTING CLASS attendees string out across the top of a Nortronics building at Anaheim as part of their studies in learning to protect company property. Right, Riley Eledge, one of the instructors, teaches students how to couple fire hoses. The class, first of a series for members of the Emergency Crew, was designed to provide instruction in meeting normal industrial emergencies. Additional classes will be scheduled until all members of the crew have been trained.

AT ANAHEIM

Fire Fighters Complete Training Class

An initial group of 12 men have completed fire fighting instruction at Nortronics Anaheim. The classes were conducted by John J. Burke, supervisor of Plant Protection, and Riley Eledge, Plant Protection specialist.

Those attending — all members of the Emergency Crew — were Bob Rogers, Eddie Smith, Les Wilson, L. H. Sisler, Ward Young, Adrian Swanson, M. L. Hawkins, Leo Plinski, Bert Beard, Bill Chestnut, Bill Risher and "Fitz" Fitzpatrick.

The instruction centered on how to combat fire where a large volume of water would be required. It included laying and charging hoses, how to throw water curtains to protect adjacent areas, and salvage.

Mr. Burke said the classes were designed to meet normal industrial emergencies. The crews are trained not only to be able to contain fires until arrival of the community fire department, but to be able to do the whole job if necessary.

"In certain circumstances — such as disaster arising from earthquakes and the like — community fire departments might not be able to respond," Mr. Burke said. "In such cases, our Emergency Crew will be prepared to protect Nortronics people and property themselves."

Other classes are planned until all members of the Emergency Crew have been trained.

First Meetings For JA Groups At Two Locations

Advisors of Northrop Nortronics Junior Achievement programs recently met with high school students who will participate in the program this year.

The Junior Achievement program teaches free enterprise by counseling young people in setting up and operating a corporate-type business during the school year.

Northrop Nortronics counsels two Junior Achievement companies. One is advised by the Anaheim department. The other is counseled by Nortronics Hawthorne.

(See ACHIEVERS, page 6)

Russell E. Rhea Heads Veterans Receiving Pins

Sixteen Nortronics employees will become eligible for 15, 20 and 25 year service pins this month.

Leading the veteran group is Russell E. Rhea, now with Operations Support group, Products Support, Hawthorne. Mr. Rhea joined Northrop a quarter century ago as a control booth operator in the Machine Shop in Plant Three.

"The building was so new they were still moving in machinery when I reported," he recalled.

Second oldest service honoree is Norman Bailey, manufacturing engineer at NSL, who started with Northrop as a mechanic in November 1948.

Fifteen year veterans who will be honored are: Anaheim — Charles Driscoll, Leon Shadowens, Ellis Lingle, Henry Leis, John Sakalis and Albert Dunton. Hawthorne — Edward Bennick, Dale Oliver, Richard Albrecht, Thomas Koenig, Henry Rosen, and Theophiel Thews. Palos Verdes — Robert Meffan and Christine Brazil.

Four Stations To Be Added For OMEGA

The Secretary of Defense has approved a request to establish four more stations for the Navy Omega Navigation System and to purchase receiving equipment for naval ships and aircraft, according to a recent announcement by the Department of Defense.

Nortronics Navigation department is building shipboard Omega receivers and delivering an airborne version. Omega utilizes shore-based transmitters and very low frequency (VLF) signals to provide 24-hour all-weather navigational information. Four Omega transmitters are currently in operation.

When the authorized eight stations go on the air, they will provide worldwide navigational signals. The four new stations are needed in the areas of the Western Pacific, Tasmanian Sea, Indian Ocean and Southern South America.

Rather than negotiate for permission to build and operate the U.S. stations on foreign soil, the Navy will find foreign partners to join the U.S. in completing the Omega system.

"Foreign participation is particularly appropriate," DOD said, "since Omega will be equally useful for all the world's navigators. Omega is not particularly a military system or even a United States system. It can be and doubtlessly will be used by all seafaring and airline operating nations of the world."

In the last year, Navy representatives have been meeting with government officials in a number of countries where new stations might be located.

These informal discussions have revealed an enthusiasm for Omega, and the prospect that foreign partners can be found to establish a truly international system of six contributing nations, the DOD announcement added.

Northrop Boeing 747 Role Outlined By L.H. Brennwald

Northrop's role in the Boeing 747 program — the largest single program in the company's history — was explained by Louis Brennwald at the October dinner meeting of the Northrop Nortronics Management Club.

Two hundred and fifty attendees heard Mr. Brennwald, Norair vice president and 747 program manager, tell how each division's work dovetails into the other. In slides and words he showed how the integrated stringer program at Anaheim, the work with fairings at Ventura, floor panels and shipping fixtures from NAS, and Norair's fuselage, panels, doors and base parts fit into the total 747 program.

Mr. Brennwald said that Boeing had announced 158 firm orders for the new plane. These came from 26 airlines and would total $3 billion.

To accomplish its own part of the program Northrop is employing between 8,000 and 9,000 people and utilizing 1,300,000 square feet of space. The work involves 40,000 pieces and one million fasteners on 153 feet of fuselage. At peak production, one plane will be completed each two-and-a-half working days.

The 747 is the largest commercial jetliner now in construction. It has a wingspan of 196 feet and a length of 234 feet. It will accommodate from 350 to 490 passengers.

In concluding, Mr. Brennwald spoke of the courage it required to embark upon such a tremendous program without government assistance. "If there weren't people with the guts to go ahead with this kind of giant program, there wouldn't be any progress," he said.

NORTHROP NEWSMAKERS

Raymond C. Lowry, Nortronics, will discuss the application of automatic testing devices to electronic training systems in a paper prepared for the Third Naval Training Devices Center Industry Conference at Orlando, Florida, November 19-21.

Electronic training devices, such as aircraft simulators and computers for simulating certain combat problems, have become so complex that maintenance is now a problem. Automatic testing devices have not been extensivley used and Mr. Lowry's paper discusses how this can be advantageously done.

Nortronics TEAMS is an example of a system that would be applicable to such automatic testing of training devices.

* * *

Rick Hachten, son of **R. A. Hachten,** resident Corporate Public Relations manager at Norair, has been elected to Beta Gamma Sigma, national honorary scholastic fraternity, Graduate School of Business Administration, UCLA.

Art Eskelin, Norair, presented a paper titled "Machining Titanium" at a November 2 Machining Seminar held at San Diego State College under sponsorship of ASTME Chapter 189.

* * *

K. C. Wu, Norair, has authored an article titled "Electrode Indentation Criterion for Resistance Spot Welding" for publication in the October issue of Research Supplement, the Welding Journal.

* * *

Tom Brazil, Norair, has represented Northrop Corporation at a Department of Defense-sponsored National Zero Defects and Motivational Symposium hosted by the U.S. Navy October 29-31 in San Diego.

* * *

Northrop family members are invited to take part in an All Nations Foundation night at Disneyland from 4 p.m. to midnight November 10. Tickets are $3.75 each at Northrop Personnel Activities outlets.

VISIT NORAIR—The Southern California Chapter, American Society of Zero Defects, visited Norair recently for a tour and briefing by Dave Petersen, acting director of Management Systems.

Telephone Tieline Network Links Northrop Facilities

Another step in a continuing modernization of Northrop's internal telephone communication system was initiated last week when Norair's Palmdale facility activated a new automatic dial telephone system.

Palmdale is the final major facility to join what is now a Northrop-wide tieline telephone network in Southern California fully equipped with automatic dialing capabilities.

This network now includes the Corporate office, Northrop Ventura, Nortronics Palos Verdes, Anaheim and Hawthorne, and Norair's main Hawthorne complex, plus Santa Fe, Torrance, Edwards AFB and Palmdale facilities.

Callers throughout this network may now reach Palmdale numbers without going through an operator. From Norair Hawthorne they will dial 7-6, then a three digit number for individual Palmdale stations. Elsewhere in the network, dial 7-7-6, then the Palmdale extension desired.

Palmdale facility will retain an attended switchboard which may be reached by dialing either 7-6-0 or 7-7-6-0. The switchboard operator will page individuals only if they can not be reached by direct dialing.

RECREATION CLUBS HOLDING ELECTIONS

Northrop Recreation Clubs are in the process of conducting their annual elections of NRC commissioners at all facilities.

Details involving these elections, including the exact times and dates for each, are available through Personnel Activities or on NRC bulletin boards.

A WINNER—Wilshire Boulevard at dawn, as only an early arrival to work would see it. Kenneth Rogers, a Beverly Hills resident, took the picture which captured first place in the Beverly Hills Chamber of Commerce First Annual Photography Contest. Northrop Corporate headquarters building can be seen just under signal light in foreground.

RENOVATED QUARTERS

NDP Seeks Help In Locating Programmers

Northrop needs computer programmers and Roger M. DiJulio, director of Planning and Control, Northrop Data Processing, has requested employees to ask their friends about joining the company.

"You may do a favor both to your friends and yourselves," Mr. DiJulio said. "They will find Northrop a splendid place to work and you may share in the Referral Award program for recommending them," according to Tak Yamashita, director of NDP Programming. "Awards of from $100 to $200 are being made to Northrop employees who bring in new computer programmers and senior programmers, respectively. We have found that Northrop people are our best means of attracting the type of employees we need," Mr. Yamashita added.

Mr. DiJulio pointed out that working conditions are excellent. A renovation program has just been completed in the programming office area at Hawthorne, under over-all direction of P. O. Wierk, manager of Northrop Data Processing.

The principal reason for the renovation was to provide working conditions comparable to the best in the aerospace industry. A great assist to concentration and productivity has been provided, according to Ed Piper, director of NDP Equipment Systems Planning, under whose immediate supervision renovation was planned and carried out.

Among the innovations are the elimination of many walls to provide better visibility between offices, a translucent ceiling for improved diffused lighting, controlled ventilation and air conditioning, and special sound deadening measures, resulting in unusually quiet work areas.

A computer terminal and conveniently located processing facility afford assistance to programmers and their development work. For this purpose, an IBM 360/20 computer and related equipment are also housed in the renovated facilities.

Other special features are new training rooms with audio-visual aids for programmer training, project areas for team efforts by programmers and system designers, and grouped supervisory offices on the periphery of open working areas.

RENOVATION OF NDP quarters in Hawthorne has provided quiet, comfortable surroundings. Partitioned and carpeted individual offices and convenient processing area below are typical. NDP seeks the aid of all Northrop personnel in locating and hiring computer programmers. Referral Awards of $100 and $200 may be earned in helping fill NDP personnel requirements.

CALLING MISSILEERS

Snark Veterans to Meet

The annual Snark celebration will afford veterans who worked with the first intercontinental missile an opportunity to renew old acquaintances.

The Snark reunion will be held Saturday, December 7, at a private club at 5107 East Ocean Boulevard, Long Beach. Festivities begin at 6:30. There will be a prime rib dinner followed by dancing to a live band.

Early in 1950 Northrop assigned a group of employees to Holloman Air Force Base, New Mexico, to test the Snark. Two years later the program was transferred to Cape Kennedy, Florida. The original Northrop test group is now scattered throughout the aerospace industry from San Francisco to San Diego as well as at all Northrop facilities throughout the U.S., according to a spokesman for the celebration.

The reunion has been held each year since 1956.

Any person who was associated with the test base group who has not received a direct invitation is urged to contact either H. I. Johnson, San Gabriel, phone 286-7345 or H. J. Zimmer, Long Beach, phone 434-2781.

Northrop Architectural Systems Adds Unique Capability to Product Lines

THE BEAUTIFUL LOS ANGELES MUSIC CENTER

Generally speaking, the most well-known Northrop technologies center on aircraft, electronics and communications. However, there is a part of the corporation which concerns itself primarily with the application of science to an older activity: architecture.

Construction technology is the scientific lifeblood of Northrop Architectural Systems, a wholly owned subsidiary of Northrop. Since joining the Northrop family, NAS has increased its share of the building market, and also expanded its product capabilities.

Formed through the consolidation of three firms acquired by Northrop, NAS is a dynamic business devoted to an area unique to the corporation: Architectural Products to Build the Face of the City.

For example, the Los Angeles Music Center Memorial Pavilion and the Department of Water and Power Building are enclosed by NAS curtainwalls. Curtainwalls are nonbearing exterior wall systems.

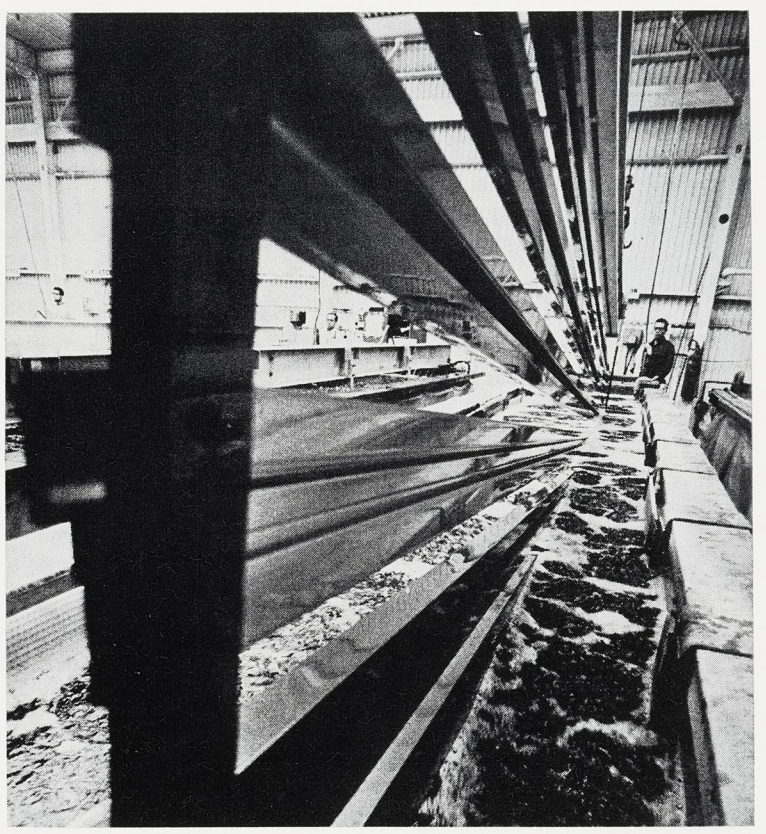
This is only one product of NAS. NAS is the largest U.S. manufacturer of sliding glass doors. Other major lines include windows, storefront systems, entrance doors, architectural sun screens, and small multipurpose buildings. NAS also has a Special Projects Division.

NAS products are manufactured and sold by licensees throughout the Free World. As an example, licensees have supplied architectural aluminum for Hilton Hotels from Zambia to Tahiti.

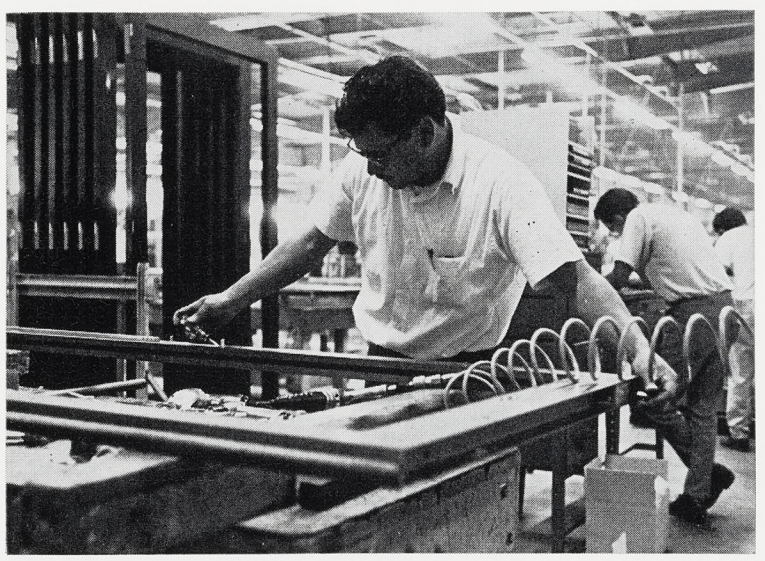
Hand-in-hand with an emphasis on taste goes an equal concern for quality at NAS. Its products, for all their beauty and appeal, are nevertheless tough and reliable.

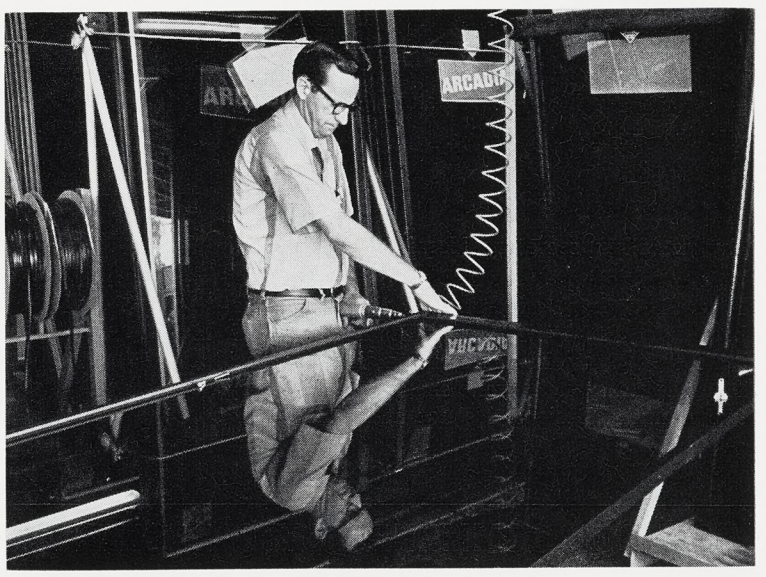
Moreover, the Special Projects Division has manufactured fixtures and numerous tools for the Norair Division 747 line.

The photographs accompanying this article, taken at the City of Industry plant of NAS, illustrate production efforts which have built the NAS reputation. All NAS facilities (Mountain View in California, Skokie in Illinois) have established Northrop firmly in a new product area, while adding to its already fine name for craftsmanship.

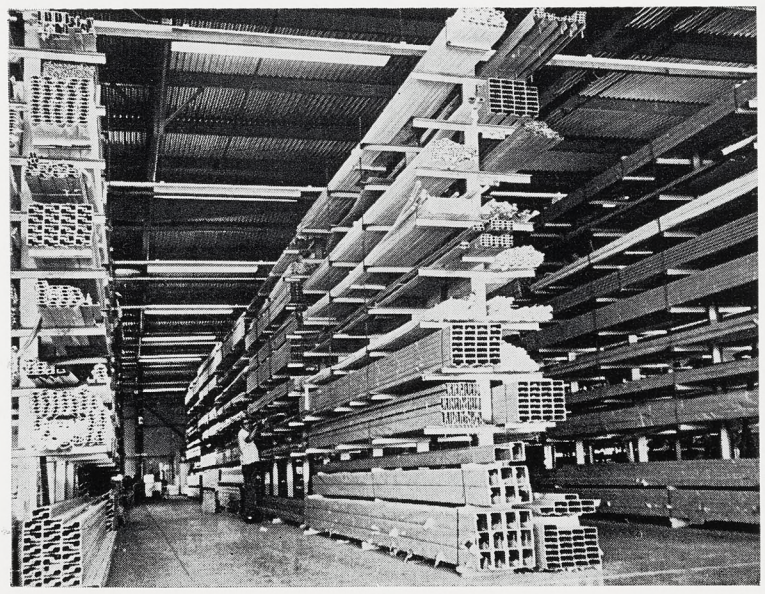


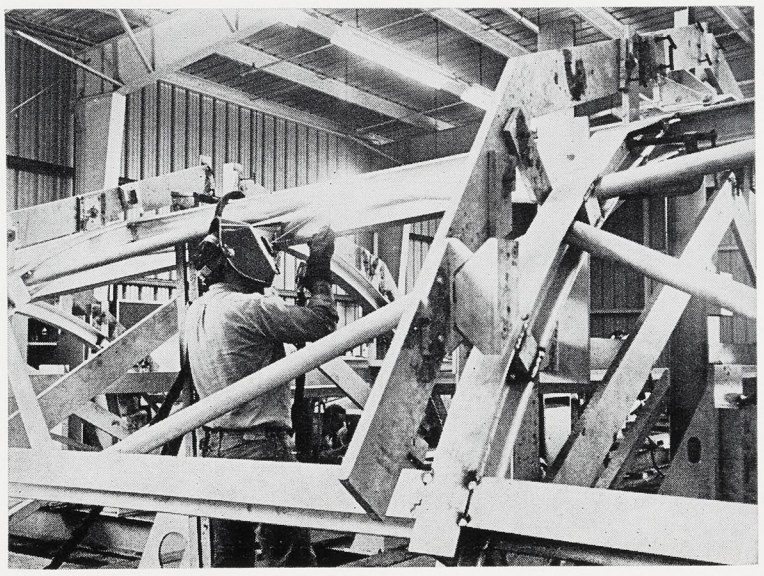
NORTHROP ARCHITECTURAL Systems is the nation's largest manufacturer of sliding glass doors and also makes a wide assortment of items for building purposes. Stocks (above) at NAS's City of Industry site feed hungry assembly lines. Long string of materials (right) move through treating tanks. There are 15 tanks, 2 overhead cranes serving them at NAS. Oscar Santa Cruz (below, left) installs weather seals in custom-made glass door. NAS customizes many of its products to specific jobs or purposes.





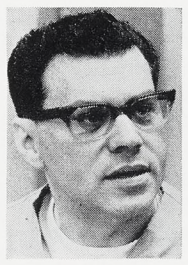
Finished storefront kits (above) are checked by Manual Estrada prior to shipment to customer as ready-to-install hardware. Many NAS products are in use around the world. Finished sliding glass door (right above) mirrors Robert Van Gordon as he fastens framework for hotel curtainwall project. Storage area (left) houses thousands of feet of extrusion stock. James Strickland removes stock. The Special Projects Division of NAS handles many types of assignments. Typical is the production of shipping fixtures (right) for the Boeing 747 jetliner program. Charles Belgrade makes one of approximately 500 welds required for each unit.





WHAT DO YOU THINK?

Have The Medical Research Reports Affected Your Smoking Habits



Mr. Balaszi

Frank Balaszi, Potting Room, Ventura:

Not at all. But, I only smoke cigars. I tried cigarettes once but I just didn't see anything in them. There's nothing like a good cigar, you know.

Mrs. Guolo

Millie Guolo, secretary, Nortronics Anaheim:

No, because I quit smoking six years ago. I think the early publicity had something to do with it. Also, there was the money and the odor. But I guess common sense had more to do with it than anything else. Now if I could get my husband to follow my example . . .

Mrs. Pittman

Shirley Pittman, electronic assembler, Ventura:

No, because I haven't smoked since I was a teenager and it was a fad. My reason for not smoking is not really a good one. I just can't stand the smell of smoke.

Mr. McKennery

Dan McKennery, jr., Transportation, Norair:

No, I've been smoking since I was 17. They don't bother me one way or the other. I smoke about a pack a day.

Mr. Shaughnessy

Tom M. Shaughnessy, Finance, Nortronics Palos Verdes:

The only effect the medical reports have had for me is that I smoke just as much and worry more. I tried to quit once on my doctor's orders, but I got so irritable that I decided if I wanted to keep my job, my wife and son, I had better start puffing again.

Mrs. Aitken

Evelyn Aitken, secretary, Norair:

It hasn't affected my smoking habits because I wouldn't touch cigarettes. Neither my husband nor I or any of our families have smoked. I discourage my friends from smoking because I heard that each cigarette shortens your life by two minutes. Besides, it's not at all ladylike.

SCHOOL COMMENDS OTTO DECKER

Otto Decker, Nortronics test engineer, has received an award for outstanding voluntary community service because he had time for clocks and boys.

The Willowbrook School District presented the award to Mr. Decker for conducting a weekly class in clock repairing for boys in the Carver Elementary School, El Segundo.

Mr. Decker volunteered to conduct the class without pay because as a boy he worked with clocks in a jewelry store and remembered his own fascination with their wheels and gears.

"The boys are really interested," he reports, "and it is a help to them. It is something they could use as a trade. Also working with small parts is excellent training for future work in any kind of assembly. Then, they can also get their own clocks repaired. Recently we worked on an antique mantle clock that must have been at least 50 years old."

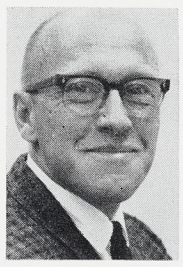
Mr. Decker is not the only Nortronics employee who is assisting the school, according to Mrs. Hannah S. Moore, the school PTA Awards chairman. Seven others assisted in making the awards program possible. They are D. D. Diem, foreman; Mrs. V. L. Lund and Mrs. Carrie Matthews, stockroom clerks; Mrs. E. F. Sullivan, jr., Test; Albert Page, Maintenance; Mrs. Hellen Campbell, IBM operator; and Lola Davis, timekeeper.

HE 'HOT SHOES'

Trophies Show Ted Judge's Cycle Style

One of the "hot shoes" around motorcycle race tracks near Corona, in the Simi Valley and at Victorville is a Ventura project engineer.

You'd never think, seeing him at work in the Engineering building, that Ted Judge would be "popping wheelies" and clearing jumps with all rubber off the ground on a Sunday afternoon. But, it's true.



Mr. Judge

Ted is a motorcycle rider par excellence and has trophies and a long string of wins to prove it. In 1963, Ted collected 42 first and second place wins for his best year so far. In the small bike class of over 2,000 riders he placed fifth in the American Motorcycle Association's Southern California District 37. "That was my year, the peak of all the effort and excitement came then," he recalls.

Since then, Ted has raced more than 400 times, but always for the thrill of competing and never for money.

From the late 30's, when Ted was a lad of 17, he was always thrilled by speed. In Lansing, Michigan, he lived across the street from a national motorcycle champion.

When the new scrambles track opened recently in Huntington Beach, Ted was one of 21 invited to participate in opening day ceremonies. And, this was one of his biggest challenges: a T-T scrambles track where the jumps are high and the turns are hairpin.

In competition Ted rides a Honda or a 100 cc Bultaco, both of which he owns and maintains. "That's half of the fun," he exclaims. "I get as much pleasure from finely tuning a machine as I do from riding it."

However, he prefers to ride the smaller bikes, in the 200 cc class or under, because of the ease of handling and their maneuverability.

Ted has been entering about 45 races a year. He'd like to finish off this season's racing by maintaining his current position of eighth in a field of about 2,100 riders.

"After that," he concedes, "I may settle down to a couple of dozen a year."

TED JUDGE 'HOT SHOES' AROUND A TURN

Hallicrafters Offers Bargains For Christmas

If your Christmas shopping list includes something in the fields of radio or communications equipment, a check with a Northrop Personnel Activities outlet might save you some money on your purchase.

The Hallicrafters Company, a Northrop subsidiary, has initiated a special offer to Northrop personnel only of savings of up to 60 per cent off retail prices of their products.

Hallicrafters manufactures quality products in amateur, shortwave, high fidelity and standard broadcast radio, as well as two-way communications equipment, direction-finding radios and related items.

Personnel Activities outlets have product literature and price information. Purchase orders may be placed through these offices.

Knowing 'Truth' Wins TV Prizes For Mr. Gentile

Anthony Gentile, Norair leadman in Automated Tool Control Visibility, will be seen on a Truth or Consequences television show to be aired either November 11 or 12 in the Southland by Channel 11.

Mr. Gentile attended the show's taping in early September with a group of friends from the Long Beach-Lakewood area. Emcee Bob Barker picked him to participate when it was revealed Mr. Gentile served four years as a city councilman in Springfield, Massachusetts, and was adept at public speaking.

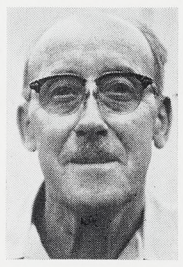
In the show, Mr. Gentile and two other contestants are asked to listen to talks by Mr. Barker and actress Marie Wilson and distinguish between true and inaccurate statements.

Mr. Gentile did quite well. He won $50, a watch and perfume for his wife.

Fascinating Stories Are a Bonus for Coin Collectors

Looking for good stories? Pass up books and take up coin collecting. This is the advice of Joe Porter, NRC Coin Club commissioner at Nortronics Anaheim.

"Behind every coin there is a story and often it is a fascinating bit of Americana," Mr. Porter said.



Mr. Porter

As an example, he mentioned the origin of our term "two bits" used for a quarter. The American silver dollar is the size, weight and metal of the Spanish "Piece of Eight" so sought by the buccaneers of the 17th century. This coin was widely circulated in the Americas. Often it was cut into "bits" to make change. A ⅛-section was the smallest and was known as "one bit." It had a value of 12½ cents. So the 25-cent piece became "two bits."

"This is but one of the fascinating stories you can learn about coins," Mr. Porter said. "However, there is more to coin collecting than stories. It is one hobby where one can almost be sure that his purchases will increase in value.

"Coins will always be worth their face value. While rarities bring astronomical amounts at times, even ordinary coins can bring a sizeable profit."

In this respect he mentioned the recent dramatic rise in value of silver dimes, quarters and half dollars when the U.S. stopped minting silver coins.

"An excellent way to get started in this hobby is to join us in the NRC Coin Club," he added. "We'll be delighted to help you get started. Our next club meeting is on Tuesday, November 12, at the NRC Clubhouse, Fullerton."

There is also a Northrop Coin Club operating in the Hawthorne area. Contact Personnel Activities for details.

FINAL NRC DANCE SET NOVEMBER 9

There is still time to get tickets for the Northrop Recreation Club's last dance of the year, the 'Fall Fling,' set for Saturday, November 9, at the Mayflower Ballroom, Inglewood.

Tickets will continue on sale at Personnel Activities through Friday. They will also be on sale at the door on 'Fling' night.

Dancing to the music of Jimmy Talbert and his Orchestra will begin at 9:30 p.m., following a happy hour that starts at 8:30.

Tickets are $1.50 per person.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Chevrolet, 1964 Bel Air, r/h, auto. trans., p/s, $950. 213-324-4817. A

Ford, 1963 Fairlane sports cpe., 4-spd., V-8, 4-bbl. carb., $700 & take over $42 mo. pymts., $924 bal. 213-865-0197. A

Ford, 1955 Fairlane, 4-dr. sedan, r/h, auto. trans., $180. 213-675-7403. A

Dodge, 1964 Dart GT, 4-spd., radio, $775. 213-372-5367. A

Corvair, 1962 Monza, r/h, auto. trans., $400. 213-673-1253. A

Ford, 1963 Fastback, 390 hi. perf., bored to 427 cu. in., 4-spd., r/h, $800. 805-495-4429.

Buick, 1966 Riviera GS custom, fully equipped, $3,550. 213-755-4781. A

Chevrolet, 1964 Malibu 2-dr., r/h, p/s, auto. trans., $1,195. 213-341-4016. A

Buick, 1962 Electra 225, 2-dr., h/top, completely equipped, $850. 213-324-2992. A

Volkswagen, 1964, 1500 series, $850. 213-675-4985. A

Toyota, 1968 Land Cruiser, 4-wheel dr., soft top, $2,450. 213-862-8215. A

Dune Buggy, 1959 VW, Pody fiberglass body, $950. 213-697-1075. A

Chevrolet, 1967 Impala, 2-dr. h/top, V-8, auto. trans., p/s, p/b, fact. air, $2,095. 714-638-2025. A

Volkswagen, 1968 square back, 2,300 mi., $2,300. 213-676-8816. A

Volkswagen, 1968, auto., 6,000 mi., $1,800. 213-451-4261. A

Volkswagen, 1958, $300. 213-426-4060. A

Station Wagon, 1966 Chevy II, V-8, auto. trans., air, $1,795. 213-862-3027. A

Chevrolet, 1965 Malibu, 2-dr., h/top, V-8, p/s, auto. trans., r/h, $1,800. 213-371-0323.

Chevrolet, 1967 Caprice, p/s, p/b, fact. air, $500 & take over $116 mo. pymts. or $3,000. 213-373-2723. A

Mercury, 1966 Monterey, 4-dr., r/h, p/b, p/s, a/c, $2,295. 213-869-3419. A

Chevrolet, 1964 Impala, 2-dr. h/top, full power, 283 eng., auto., $1,100. 213-882-2429. A

Mustang, 1967 2+2, 390 eng., 4-spd., air, power, AM-FM, extras, $2,500. 213-323-4257.

Chrysler, 1960 300 F, 413 cu. in. ram, full power, $550. 213-370-4315. A

Station Wagon, 1966 Dodge, 4-dr., 6-pass., p/s, p/b, $1,695. 714-842-2276. A

Corvette, 1967 327 Fastback, 300 h.p., AM-FM radio, posit. rear end, $3,600. 213-679-7840. A

Chevrolet, 1955 2-dr. sedan, 6-cyl., auto., r/h, $175. 213-677-5128. A

Plymouth, 1959 Belvedere, 2-dr., auto., V-8, $275. 213-846-5589. A

Chevrolet, 1961 Biscayne, 2-dr., a/c, 6-cyl., new trans., $375. 213-886-4438. A

Pickup Truck, 1959 Ford, ¾-ton, auto. trans., V-8, hvy. duty suspension, camper, $695. 714-838-3040. A

Oldsmobile, 1961, good tires, $300. 213-587-1312. A

Plymouth, 1967 Sports Fury, 2-dr., h/top, auto. trans., p/s, p/b, a/c, $2,995. 213-326-1856. A

Ford, 1965 Galaxie 500 XL, 4-spd., $1,350. 213-676-4492. A

Chevelle, 1967, 396, r/h, p/s, p/b, a/c, Hydro, $2,500. 213-363-7968. A

Sunbeam, 1965 Tiger, $1,900. 213-639-0702.

Volkswagen, 1961, reblt. eng., $750. 213-378-4924. A

Ford Bronco, 4-wheel dr., 289 cu. in. V-8, limited slip both axles, r/h, $2,350. 714-847-2648. A

Pickup Truck, 1950 Chev., ½-ton, 6-cyl., $250. 213-675-4589. A

T-Bird, 1965, full power, air, $2,500. 213-679-0848. A

Austin Healey 3000, 1966, o/drive, wire whls., $2,695. 213-376-2230. A

Volkswagen, 1968 sed., 4-spd., AM-FM Sapphire radio, $1,950. 213-667-2504. A

Ford, 1963 Galaxie 500, 4-dr., a/c, $600. 213-413-8429. A

Buick, 1965 Riviera, full power, a/c, $2,900. 213-865-5014. A

Buick, 1962 Skylark, fact. air, full power, $1,195. 213-675-0479. A

Valiant, 1962 V200, 2-dr. h/top, 3-spd. auto. trans., $895. 213-325-2863. A

Mustang, 1966 GT, hi-perf. 289-271 h.p., 4-spd. trans., disc brakes, extras, $2,100. 213-675-2514. A

Station Wagon, 1962 Falcon, 4-dr., r/h, auto. trans., eng. o/haul, $575. 714-846-1858. A

Chevrolet, 1960 Impala convt., V-8, r/h, p/s, p/b, auto. trans., $425. 213-378-3255. A

Station Wagon, 1962 Mercury, a/c, p/s, r/h, $695. 213-348-8712. A

Station Wagon, 1961 Oldsmobile, fully equipped, $375. 213-757-5595. A

Automobiles For Sale

MG, 1964 1100, sedan, $500. 213-638-0244.

Chevrolet, 1958, V-8 4-dr., auto., p/s, radio, $300. 213-675-6963. A

Chevrolet, 1964 Biscayne, 327 V-8, 4-spd., $795. 213-472-6715. A

Dune Buggy, fiberglass body, parts reblt. from '61 VW, $1,095. 213-396-6739. A

Volkswagen, 1957 Sunroof, eng. needs work, $150. 213-375-5629. A

Volkswagen, 1964 2-dr. sedan, r/h, new exhaust sys., $975. 805-642-5232. A

Valiant, 1963, auto. trans., r/h, $695. 213-325-6546. A

Pickup, 1965 Chev., w/fully equipped pullman camper, $1,595. 213-865-2036. A

Pickup, 1967 GMC, ¾-ton V-6, p/s, p/b, a/c, $2,500. 213-675-6223. A

Volkswagen, 1963 sedan, $795. 213-477-3120.

Mercedes Benz, 1956, 190 SL, new tires, $750. 213-373-1395. A

Ford, 1965 Fairlane 500, p/s, p/b, fac. air, $1,665. 213-372-3370. A

Pickup, 1960 Chev., ¾-ton, auto. trans., r/h, w/pullman camper, $950. 213-672-5694. A

Oldsmobile, 1967, Cutlass Supreme, 4-dr. h/top, p/s, p/b, a/c, r/h, auto. trans., $2,500. 213-327-0883. A

Pickup, 1957 Ford, 1961 cabover camper, $1,750. 213-371-1785. A

Chevrolet, 1966 Nova 2, 2-dr. h/top, Hydro, $1,600. 213-632-1666. A

Station Wagon, 1957 Plymouth, $125. 213-675-2416. A

Pontiac, 1967 Grand Prix, 2-dr. h/top, auto. trans., fac. air, p/s, p/b, radio, $2,350. 213-645-9522. A

Pickup, 1967 Chev., custom cab, 283 h.p., 3-spd., hvy. duty equip., 10,000 mi., $2,500. 213-284-0768. A

Household Items For Sale

Stove, Crosley, elec., 2-oven, $40. 213-379-4356. B

Bedroom Set, solid walnt, 5-pcs., 1 yr. old, incl. mattress & box spring, $200. 213-370-5230. B

Bar Stools, 2, Italian provincial, white legs, yellow vinyl, $50. 213-457-9186. B

Range, Gaffers & Sattler Deluxe, $85. 213-753-7484. B

Dryer, Sears Kenmore 500, gas, 7 mos. old, $120. 213-329-9303. B

High Chair, Cosco, makes into youth chair, $10. 213-679-8426. B

Refrigerator, 9 cu. ft. Admiral, $25. 213-679-7996. B

Sofa, 8′, w/love seat, gold velvet, 1 mo. old, $450. 213-672-0235. B

Builtins, coppertone, 2 yrs. old, elec., $70. 213-675-6303. B

Bedroom Set, $165. 213-373-1266. B

Sewing Machine, Morse, blond cabinet, knee control, $30. 213-327-9044. B

Refrigerator, Frigidaire, 1957 13 cu. ft., top freezer, $35. 213-378-0603. B

Rug, 9x12, beige, $20. 213-327-6918. B

Washer, 1961 Kenmore, auto., white, $50. 213-644-1952. B

Table, 32″x48″, extra leaf, $8. 213-757-5229.

Stove, apt. size, $35. 213-374-5696. B

Davenport, matching chair, blue & green print, $100. 213-424-9187. B

Stove, apt. size, gas, 4-burner, $25. 213-320-1943. B

Crib & playpen, other items, $20 or sell sep. 213-832-1684. B

Range, O'Keefe & Merrit, $50. 213-755-8542.

Miscellaneous For Sale

Roller Skates, men's size 7 & case, $10. Box 2201. C

Amplifier, Eico HF-12, monaural, 4 inputs, $25. 213-327-4267. C

Ski Boat, 13′ Wizard, fiberglass, trailer, $265. 213-378-3055. C

Home, Palos Verdes, 4-bdrm., enc. front & back yards, 10% dn., $42,500. 213-377-9716.

Lawnmower, power, 18″ reel-type w/Briggs & Stratton eng., $20. 213-756-9697. C

Wiglet, brown, worn twice, human hair, $20. 213-320-6685. C

Razor, Norelco triple header speedshave 35T, $12.50. 213-328-5655. C

Trumpet, student's, case, $45. 714-592-5039.

Auto Parts, chassis for 1956 VW, 1960 transaxle, whls., tires, $150. 805-495-8515. C

TV, 1946 7″ Hallicrafter, $25. 213-638-7463.

Rifle, G-43 German, w/scope, sling & rod, $150. 213-675-8617. C

Radio, Motorola, FM, for 12 V. sys., $40. 213-292-6360. C

Suits, men's size 40, 2 dble. breasted, $10 ea. 213-632-3623. C

Train Layout, H.O., approx. 60 cars, 5 engs., extras, on 4′x10′ panel, $80. 213-291-0025.

Bicycle, English 9-spd., $15. 213-327-9338. C

Accordion, Contella, 120 bass, case, $150. 213-834-9468. C

Accordion, MM20 professional, w/amplifier, $1,200. 213-679-4863. C

Mobile Home, 20x44, 1968, Rancho Huntington, awn, porch, carport, a/c, $10,500. 213-597-2260. C

Wedding Dress, size 8-9, satin w/lace, long sleeves, 9′ train, $45. 213-676-8833. C

Pistol, 9mm Browning hi-power auto., w/tangent sight, $185. 213-785-6142. C

Hearing Aid, 5 batts., Mercury made, adj., $50. 213-675-1982. C

Miscellaneous For Sale

House, 4-bdrm., 2 baths, f.a. heat, $2,000 dn., $170 mo., $25,750. 213-776-5234. C

Motorcycle, 1964 Ducati, new eng., $235. 213-370-1963. C

Airplane, Ercoupe, D model, will relicense date of sale, $2,250. 213-639-6839. C

Antenna Rotator, CDR T.V., $20. 213-377-6658. C

House Trailer, 8′x28′ Traveler, $400. 213-324-8891. C

Ski Boat, 13½′, 44 h.p. Mercury outbd., trailer, many extras, $600. 213-476-1649. C

Lot, ½-acre, Apple Valley, utils., $20 mo, $150 dn., $1,995. 213-328-7048. C

Travel Trailer, 1965 14′ Scotsman, sleeps 4, $595. 714-893-1252. C

Stroller, fixed wheels, $6. 213-671-0925. C

Apt, 2-bdrm., den, 2 baths, elec. kitchen, pool, party rm., hobby shop, Gardena area, adults, 1 yr. lease at $215 mo. or $27,000. 213-323-1580. C

Home, Rolling Hills Ests., cor. lot, 4-bdrm., 2 baths, bltins, cpts., dps., recently painted, 20 x 40 heated pool, $45,500. 213-832-4472. C

Kittens, Siamese, male & female, 8 wks. old, $12 ea. 213-835-6710. C

Speaker, Hi-Fi, & cabinet, 12″ Jensen Duax, $15. 213-329-1705. C

Stroller, $5. 213-376-4831. C

Enlarger, Omega B-4, trays & access., $55. 213-374-5133. C

Camera, Minolta Hi-Matic 9, 35mm, 1½ yrs. old, case, $75. 213-325-9492. C

Lapidary Equipment, complete, $75 or sell sep. 213-326-5912. C

Bicycle, 3-spd. Sting Ray, 1 yr. old, $30. 213-672-2370. C

Skis, child's, Marker bindings, 5′, $12. 213-376-5810. C

Swimming Pool, 12′x3′, all access., $25. 213-329-9021. C

Typewriter, Remington elec., office size, $175. 213-676-3050. C

Tape Player, stereo, $65. 213-329-8822. C

Accordion, Contello 120 bass w/case, $200. 213-374-8645. C

Cabin Cruiser, 17′, glass, trailer, 110 Merc eng., fully equipped, $1,900. 213-375-0351. C

Pups, German shepherd, Rin Tin Tin color, females, $30. 213-675-3725. C

Motorcycle, Honda CB-160, $350. 213-221-0962. C

Christmas Lights, outdr-type, 8 strings of 25, many others, roof stands, flood light, $35. 714-527-7397. C

Fall, Miss R & M Demi, light blond, Polyamid Fashion Fiber, $55. 213-375-8722. C

Trailer, 1961 16′ Dalton, elec./butane refrig., sleeps 5, $650. 213-534-5287. C

Stereo, Somey, AM-FM, portable, a.c.-d.c., $50. 213-672-7424. C

Sailboat, 23′ Star Class day sailer, $700. 213-391-3715. C

Mini Bike, 8 h.p. West Bend, $135. 213-393-5649. C

Xylophone, Deagan, $125. 213-329-5364. C

Motorcycle, 1968, 100 cc Moto Beta, $350. 714-528-5378. C

Wedding & Engagement ring set, $150. 213-322-5930. C

Toys, fighting men by Mattel, $5. 213-371-8695. C

Surfboard, 9′7″ Rick, $45. 213-370-2304. C

Motorcycle, 1966 Honda, 305 Scrambler, $375. 213-377-8817. C

Motorcycle, 1966 Triumph Bonneville, 650 cc, $900. 213-675-9673. C

Antenna Rotator, for TV, Sears, auto., w/elec. motor, never used, $20. 714-649-2260. C

Drill Press, Dunlop, hvy. duty bench model, ½ h.p. motor, $60. 213-754-5358. C

Organ, Thomas spinet, elec., $350. 714-530-2479. C

Chain Saw, hvy. duty Homelite, $125. 213-375-0915. C

Guitar, Martin D-28, hard case, $350. 213-671-9371. C

Hi-Fi, Motorola, stereo, portable, twin spkrs., $35. 213-677-5265. C

Surfboard, Harbor Cheater speedfin, 10′, $35. 213-375-4940. C

Home, 5-bdrm., 3-car gar., central a/c, undg. util., 600 sq. ft. brick & redwd. patio, landscaped, sprinklers, fence, dps., near Northrop Ventura, $38,500. 213-889-8075. C

Swimming Pool, 24′ dia. x 4′ deep, filter & all access., $185. 213-633-3993. C

Poodle, white toy, 4 mos. old, shots, $45. 213-438-9700. C

Motorcycle, 1968 Honda, 90 cc Scrambler, extras, $325. 213-672-9322. C

House, 4-bdrm., 2 baths, 2-story provincial, cpts., dps., fences, att. dble. gar., f/place, fam. rm., covered patio, 5 yrs. old, near El Camino, $39,000. 213-329-0086. C

Tires & wheels, 2 750x15, 3 600x16, 15″ slick, & 2 550x5, $30. 213-329-3286. C

Stereo, mahogany cabinet, $75. 213-372-2934.

Motorcycle, Honda 90, 7½ h.p., elec. starter, all access., $220. 213-461-2503. C

Acreage, 2½ acres, in Lancaster, $1,500 dn. $50 mo., 6% int., $4,990. 213-375-7130. C

Camera, Polaroid auto. 100, flash, used twice, $65. 714-635-3315. C

Scuba Outfit, complete, $175. 213-323-5685.

Lot, Lake Elizabeth, paved street, electricity & water, 10% dn., $4,150. 805-947-8389. C

Tent Trailer, sleeps 6, stove, ice box, sink, $700. 213-320-7197. C

Miscellaneous For Sale

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., trailer, $800. 714-838-7161. C

Tool Box, roll-a-way type, Sears 2-drwr., $35. 213-320-7065. C

Surfboard, Bing 9′7″, less than 1 yr. old, $60. 213-549-1349. C

Record Player, stereo, Silvertone portable, det. spkrs., $35. 213-675-5946. C

Sailboat, 28′ sloop, sleeps 4, inbd. eng., main, jib, genoa & spinnaker, $5,000. 213-378-4352. C

Preamplifier, Gommes, hi-fi, AM-FM-AFC tuner, $50. 213-679-2864. C

Home, 4-bdrm., fam. rm., 3 baths, bltins, cpts., tri-level, heated 16′x32′ pool, dble. car gar., b/wall fence, Torrance. $49,500. 213-370-6734. C

Motorcycle, 1967 Honda Super Hawk, 305 cc, $500. 213-545-1944, 213-534-5298. C

Bicycle, girl's 24″, $15. 213-325-4737. C

Inspector's Tools, precision type, complete set, $350. 213-567-2723. C

Tires, 4 Goodyear custom power cushion, 8.45x15, $2 ea. 213-677-7350. C

House, 4-bdrm., 2 baths, beam ceiling, f/place, walled corner lot, covered patio, det. gar., 15 min. to Norair, $34,950. 213-323-0826. C

Acreage, 2½ acres, Antelope Valley, $42 dn., $42 mo., no int., $4,200. 213-378-1026. C

House, 4-bdrm., 2 baths, 3 miles from Nort. Anaheim, bltins, f/place, $24,750. 714-871-7640. C

Utility Trailer, 4′x8′, $125. 213-326-1409. C

Acreage, 2 acres, view, new Perris Reservoir, $40 dn., $40 mo., $3,950. 213-377-1074.

Baby Pram, Pedigree English buggy, use as car bed, $75. 213-476-2317. C

Shocks, 4, for '67 or '68 Ford, $12. 213-671-6692. C

Pool Table, 2 cues, balls, $35. 213-371-6775.

Wanted to Buy

Airplane, Piper J-3 Cub in good condition or something similar, not more than $1,800. 213-324-6770. D

Reloading Dies, for .38 Special, .38 auto., 30-30 Winchester & 7mm Mauser, w/bullets, brass & powder measure. 213-374-8358. D

Van or sports wagon, Ford or Dodge, not older than 4 yrs. 213-372-7994. D

Adding Machine, elec. 213-326-6195. D

Air Compressor & spray gun outfit, good quality. 213-377-6193. D

Car, 1960 to 1964. 213-374-4703. D

Adding Machine, used, elec. or manual. 714-633-5826. D

Hardtop for 1962 Corvette, reasonable, 213-532-6109. D

Organ, elec., in good condition. Box 2202. D

Free (To Be Given Away)

Cat, long-haired female, calico, 1½ yrs. old. 213-692-6336. F

Rentals Offered

House, 2-bdrm., partly furn., encl. yard, Inglewood, $150. 213-823-1910, 213-823-5225. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Apt, 2-bdrm., unfurn., cpts., dps., stove, carport, adults, no pets, $125 mo. 213-324-1914. G

Vacation Cabins, Idylwild, 1 & 2 bdrms., f/place, stream, patios, $20-$35 w/ends; $45-$80 wk. 213-754-5288. G

Studio Apt, 3-bdrm. & den, 3 baths, $210 mo. 213-671-2219. G

House, unfurn., 2-bdrm., 2 baths, cpts., dps., bltins, f/place, gar., sundeck, ocean view, $210 mo. 213-379-9362. G

House, 2 blocks from Norair, 2-bdrm. & den, 1½ baths, attach. gar., corner lot, $190 mo. 213-676-0935. G

Apt, 3-bdrm., bltins, cpts., dps., 2 baths, laundry facilities, closed gar., $160 mo. 213-375-6715. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Lomita Blvd. & Eshelman Ave., Lomita. Ernestine G. Harper, Norair ext. 2632, 213-326-6744.

La Cienega & Melrose, Los Angeles. Meet driver anywhere in vicinity. Edith Bress, Norair ext. 2905, 213-652-2806.

7:30 a.m. — 4:15 p.m.

Pico & Crenshaw Blvds., Los Angeles. Rick Escoboza, Norair ext. 1314.

Rides Offered

8 a.m. — 4:45 p.m.

Brookhurst & Katella Ave., Anaheim. Need additional member for car pool. Robin Green, Norair ext. 1144, 714-833-0939.

Rentals Offered

Apt, 3-bdrm., 2 baths, cpts., dps., pvt. patio, gar., near Northrop, $225 mo. 213-880-3497.

Apt, 2-bdrm., furn., lge. pool & patio, closed gar., near El Camino, adults, $170. 213-329-5986. G

Apt, near Redondo, King Harbor, cpts., dps., bltins, gar. w/storage cabinets, 1-bdrm., $125; 3-bdrm., 2 baths, $180. 213-372-8835.

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Apt, 2-bdrm., unfurn., h/wood flrs., f/place, adults, close to Northrop, $100. 213-755-0630. G

Rentals Wanted

Apt or House, 1-bdrm., furn., 2 adults. 213-757-5181. H

Child Care

Child Care offered, licensed, infants preferred, fenced yd., weekly. 213-327-2621. I

Child Care offered, ages 2 through 5, weekly, lic. home, 10 min. from Norair & Nort. Hawthorne. 213-675-1392. I

Child Care wanted, mature woman, for 2 boys, ages 1 & 2½, my home, 3:42 p.m.-12:12 a.m. shift. 213-398-3350. I

Personals

I wish to express my thanks & appreciation for the gifts & interest of my many friends at Northrop on my retirement. W. H. SEWARD.

My sincere thanks to the many friends at Nortronics Anaheim for their gift in expression of sympathy in the recent loss of my daughter. STACY B. BILLINGS. L

Sincere thanks to my Northrop friends for their thoughtfulness at the recent loss of my father. FRED S. ECKSTEIN. L

My deep gratitude & appreciation to all my friends at Northrop for the kindness shown me through the years I worked with you & on my retirement. ANIS B. SCHOFIELD. L

Our sincere thanks to the Northrop Recreation Club & all our friends at Northrop & Nortronics for the cards, flowers & acts of kindness during the recent illness & death of our beloved wife & mother, Wilna Engstrand. CARL, BILL & BOB ENGSTRAND.

For Sale or Trade

Corvair, 1960, auto., r/h, $200 or trade for color TV or sewing machine. 213-377-6210.

Occasional Chair, red nylon frieze, $7 or trade for CO2 pellet or BB pistol. 213-679-1631. M

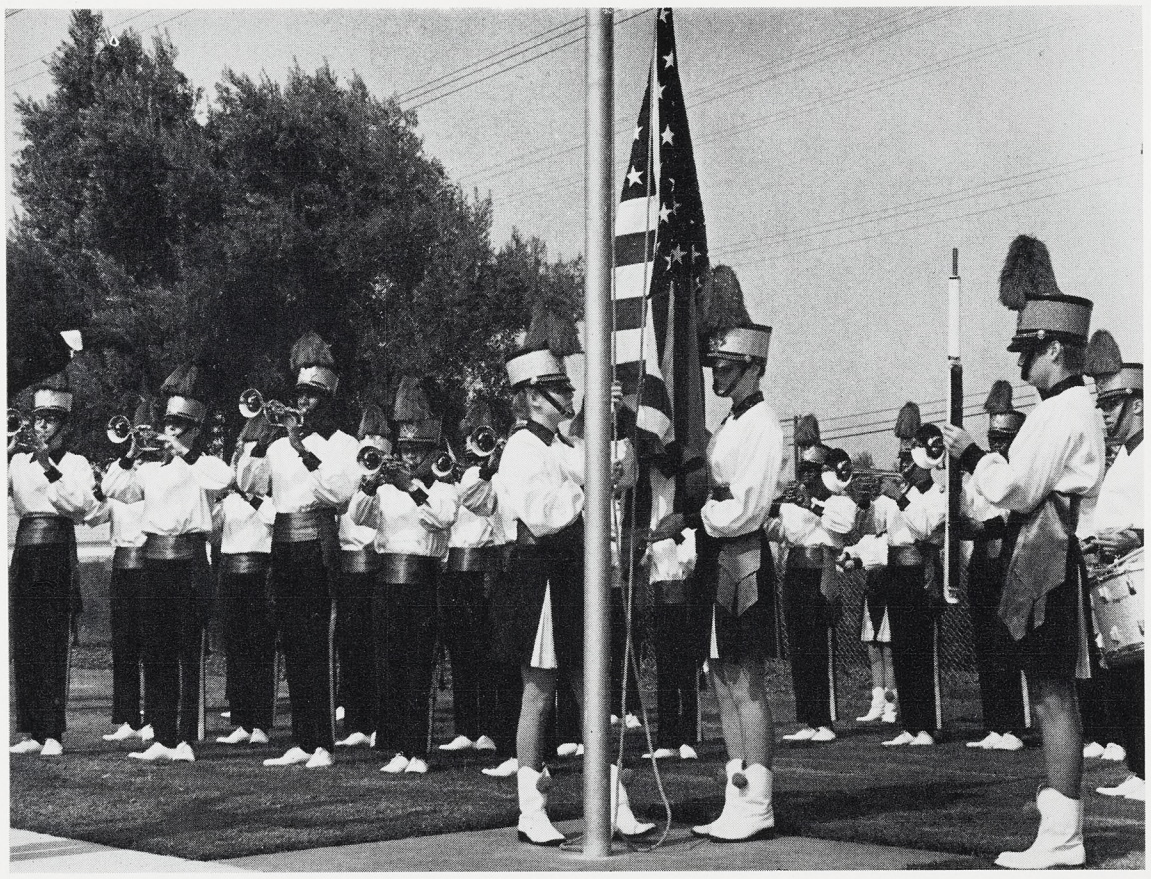
Refrigerator, $50, or trade for vacuum cleaner or 12-V. tape machine. 213-370-6400. M

Coin Club

Northrop Coin Club has changed its November meeting date from the 11th to the 25th. It will be held at 7:30 p.m. at the Hawthorne Airport Building.

Election of officers, a "swap session" and planning the club's Christmas dinner meeting will highlight activities.

NASA RECOGNITION — In ceremonies at NASA's Manned Spacecraft Center, Brown and Root-Northrop employees Ken Desert and Charles Butler (center) received "Snoopy the Astronaut" lapel pins from Astronaut Michael Collins (right center). Pins recognized outstanding work in recent test activities. Looking on are Harry Hutchens (left), BRN project manager, and Harry P. Clagett (right), BRN deputy project manager.



FLAG RAISING BY VELVET KNIGHTS LAUNCHES FAMILY DAY AT ANAHEIM

MANY NICE COMMENTS

Nortronics Family Day Is Big Success

The Northrop Nortronics Family Day Open House was an outstanding success, according to William Burch, chief, Employee Relations and chairman of the Family Day Committee.

"We have received many favorable comments about Family Day," Mr. Burch said. "The comprehensive view of the company gave families an understanding of the work their fathers and mothers, wives and husbands, are doing here."

The Family Day chairman added that the outstanding displays resulted from the wholehearted cooperation of all who took part in the event.

"There are too many to single out any person or group," Mr. Burch added. "Everyone who worked with E. T. Jessick, chairman at Anaheim, Nils Johnson at Palos Verdes and with me at Hawthorne did a fine job. My personal thanks to all of them."

A special feature of the Open House was the imaginative special displays designed to entertain as well as inform.

For example, at Page Court tops were spun on the lathes to give to children. At Hawthorne computers were programmed to print out pictures with "x's" and one was set up to play blackjack. It beat everyone who played it.

Then at both Hawthorne and Anaheim, families had an opportunity to win free phone calls over the Northrop telephone lines. NSL displayed a model of the Mariner-Mars satellite. Palos Verdes visitors were shown a model of the recently launched OV2-5 space satellite and an informative display of the company's participation in the Navy's Man-in-the-Sea program.

These special features were in addition to a full exhibition of the company's work.

Archers Plan Show

The Nortronics NRC Archery Club will provide a free archery demonstration at Estradero Park, 5500 Tower Street, Torrance, Tuesday night, November 12, according to Tony Amundson, Archery Club commissioner.

The demonstration will include trick shooting with bow and arrow and an interesting talk on archery.

ACHIEVERS

(Continued from page 1)

The 1968-69 Anaheim advisors are Ken Terry, coordinator; Bob Varner, management; Tom Sneed, marketing; Don Myers, operations; Bob Barry, financial; Jim Tway, sales; and Tom Maxwell, production.

Advisors for the Nortronics Hawthorne counseled group are Ed Wojnar, management; Fred Beier, sales; Art Dugdale, production; and Russ Rhea, coordinator.

"At the initial meeting of the Anaheim group," according to Mr. Varner, who has been an advisor for three years, "our achievers selected the name 'Keiko, a Junior Achievement Company.' They will manufacture, market and — hopefully — make a profit from a specialized key chain."

Art Dugdale said the Nortronics Hawthorne counseled group selected 'Handitac' as its company name. The product will be a decorative towel holder that is self-mounting to the wall.

Northrop Nortronics has participated in the program for nine years.

Christmas Parties Planned By NRC At Two Locations

Dates have been set for two gala Christmas parties staged annually for the sons and daughters of Northrop employees by Northrop Recreation Clubs.

One, to be presented December 8 at the Shrine Auditorium, Los Angeles, will be for Corporate, Norair and Nortronics Hawthorne and Palos Verdes youngsters.

The other, set for December 15 at NRC Clubhouse, Fullerton, will be for Nortronics Anaheim youth.

More than 12,000 youngsters of all ages turned out for a similar show last year at the Shrine Auditorium. Since a larger crowd is expected this year, the event is being planned in three segments. Identical programs will be held at 10 a.m., 1 and 4 p.m.

Last week special invitations and ticket orders were distributed with paychecks. They allow the individual to specify which show he prefers to attend and list the number and ages of his guests. NRC must have these orders returned by November 15 in order to complete arrangements for the big show and gifts for those attending.

Nortronics Anaheim employees will be advised of ticket arrangements in the near future. The Anaheim extravaganza will be held from noon to 4 p.m.

Both parties will feature entertainment, surprises and gifts for the youngsters.

Ski Club Sets Meeting to Plan Future Events

An organization meeting of the Nortronics Anaheim Ski Club is set for tomorrow night—November 7—at the NRC Clubhouse, Fullerton.

Donna Robison, in charge of organizing the club, said the meeting was to formulate plans for the coming ski year.

"The club will probably make several trips during the season," Donna said. "Suggestions for locations will be solicited during this first meeting. We hope to make several local jaunts just to get back in the feel of 'going down the slope.' Then we hope to organize a complete Christmas week trip to one of the better known ski slopes."

Donna added that the club is not just for experts. "Beginners—or snow bunnies—are equally welcome," she said. "Arrangements can be made through the club for expert instruction."

Additional details may be obtained by calling Donna Robison at Anaheim, ext. 613.

Charity Campaign Provides Funds for Many Purposes

The campaign period is brief —November 4-15. The end results — urgently needed financial support of charitable, health and welfare agencies in many communities—are long-lasting.

This is the message more than 300 volunteers are passing on this week as the 14th annual Northrop employees' AID-NORAID campaign swings into high gear.

Taking part are personnel in the Corporate office, Norair Division, and Nortronics West Coast and Huntsville, Alabama, facilities.

This is the only campaign of its type conducted each year at Northrop. It is an opportunity for employees to authorize small weekly payroll deductions to meet most of their community welfare obligations.

AID-NORAID leaves the options entirely to the individual.

Suggested again this year is the popular "fair share" concept of giving. For those in lower income brackets, this means the equivalent of 12 minutes pay per week. It ranges to higher amounts for those earning more. The individual may designate deductions along this graduated scale. Or he may choose to give a fixed amount.

AID-NORAID allows the donor to specify his contributions go to any recognizable charity in any community in the United States. Most, however, give with the understanding their gifts will support many organizations in the community in which he lives, plus NORAID, Northrop's own in-plant charity, based on a well-defined formula.

Payroll deduction tab cards for AID-NORAID have been revised for 1969. Thus, all participants must sign new cards, even if they are currently giving through AID-NORAID. And those designating their contributions must also complete new forms for this purpose, as they must each year.

The procedure is simple, in either case. The cards are designed to provide information individual donors will need in making their decisions. Campaign workers may be able to answer special questions.

Payroll deductions authorized during the November 4-15 campaign will not be made until January 1969.

However, all authorizations or designations must be returned on or before November 20.

Turkey Trot Set For November 16

The annual Nortronics Turkey Trot will be held November 16 at the NRC Clubhouse, 1834 Valencia, Fullerton. Tickets — $2 per person — may be obtained from NRC representatives or at the Personnel Activities office, Anaheim.

Feature of the evening will be dancing from 9 p.m. to 1 a.m.

Top Leaders Will Direct WINCON '69

A group of the nation's top leaders in industry, education and the military services will direct operations of WINCON, the 1969 Winter Convention on Aerospace and Electronics Systems set for February 11-13 at the Biltmore Hotel in Los Angeles.

In addition to the recently named WINCON general chairman, Frederick Stevens, vice president and Nortronics general manager, other top officials include Dr. G. Dale Bagley, TRW Systems, technical program chairman and Dr. A. D. Wheelon, Hughes Aircraft Company, associate technical program chairman.

On the Technical Program Committee will be Dr. J. A. Aseltine, professor of Industrial and Electrical Engineering, USC; Robert M. Parker, North American Rockwell; M. L. Lohr, TRW Systems; and David R. S. McColl, Aerospace Corporation.

The Advisory Committee includes the Hon. John S. Foster, director of Defense Research and Engineering; the Hon. Robert A. Frosch, assistant Secretary of the Navy; Admiral John J. Hyland, commander-in-chief, Pacific Fleet; Admiral Ignatius J. Galatin, chief of Naval Materiel; the Hon. Russell D. O'Neal, assistant Secretary of the Army, R&D; Lt. General Austin H. Betts, chief of Research and Development; the Hon. Alexander H. Flax, assistant Secretary of the Air Force, R&D; and Lt. General John W. O'Neill, SAMSO.

Other representatives on the Advisory Committee are Dr. Ivan Getting, president, Aerospace Corporation; Dr. William H. Pickering, director, Jet Propulsion Laboratory; Dr. William F. Ballhaus, president, Beckman Instruments; Dr. Eugene G. Fubini, vice president, IBM; A. Carl Kotchian, president, Lockheed Aircraft Corporation; Dr. Allen H. Puckett, Hughes Aircraft Company, and Dr. Henry E. Singleton, chairman of the board, Teledyne, Inc.

TOMMI VACCARO HAMMERS HOME THE POINT

NORTHROP NEWS

NORTHROP NORTRONICS

Published biweekly by Northrop Corporation, Beverly Hills, California Vol. 26, No. 23 November 20, 1968

SEALAB III Experiment Is Expanded

The U.S. Navy has expanded its forthcoming SEALAB III experiment, man's most ambitious effort yet undertaken to live and work on the ocean floor, according to an announcement from SEALAB III command headquarters in Long Beach.

Four more American divers, three Navy men and one civilian, have been added to the list of aquanauts selected to occupy the Navy's SEALAB III habitat at a depth of some 600 feet.

Two monitoring stations, built by Nortronics especially for the Navy's manned underwater experiment, will play key roles in the total program. They are housed in 26-foot vans installed aboard SEALAB III's range support ship.

The vans will provide command and control functions as well as house one of the most complete and compact medical laboratories ever assembled. They will be staffed by Navy personnel with three persons assigned to the medical van and two assigned to the command van. Northrop Nortronics is the prime systems support contractor to the Deep Submergence Systems Project, which includes the "Man-in-the-Sea" program.

The Nortronics part of the program is under the direction of George Mangurian, director, Nortronics Ocean Systems, Nortronics Systems Laboratory.

Dr. Raymond Hock, Northrop Corporate Laboratories, will assist in the physiological testing program. Warren Schreyer of the Ocean Systems section, who was responsible for the safety certification work on aquanaut equipment, is assistant test director during preparation of equipment before the experiment. He will be at San Clemente Island during the early phases of the experiment.

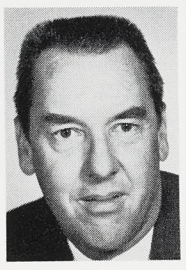
Ray Buchanan and Jim McCarthy of Anaheim had responsibility for development of the vans.

WARREN SCHREYER, GEORGE MANGURIAN, SEALAB VANS

Kaufold Named Nortronics VP, Department Manager

Roy Kaufold has been appointed vice president and manager of Northrop Corporation's Nortronics Division Navigation department at Hawthorne.

Mr. Kaufold will be responsible for all engineering and manufacturing programs at the department which produces inertial navigation systems for the giant USAF-Lockheed C-5 transport airplane as well as the stellar inertial guidance and navigation system for the triple-sonic SR-71, the world's fastest operational aircraft.



Mr. Kaufold

He will report to Ross F. Miller, Nortronics vice president and assistant general manager.

The Navigation department also produces digital computers for many aerospace applications and, in addition, produces Omega radio navigation receivers for the U.S. Navy.

Mr. Kaufold has held several key engineering management posts since joining Northrop in 1948 and is recognized nationally for his work on star sky brightness measurements.

Smiths Lead Names On Division Roster

Don't yell, "Hey, Smitty!" too loudly at Nortronics. You may get 26 replies if you do. There are that many people named Smith employed here.

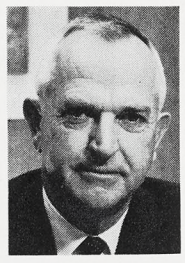
The next most numerous group is the Johnsons with 19 members. Davis is the next most popular name on the rolls with 17 represented. The Wilsons number 15. Then the Williamses and the Millers not only keep up with the Joneses, but pass them by one member. The Joneses tie with the Andersons at 13 each.

Dick Nolan Will Retire; Douglas Named Senior VP

Richard R. Nolan, senior vice president for Manufacturing and Administration, will retire next April after 30 years of service with Northrop Corporation, it has been announced by Thomas V. Jones, president.

George F. Douglas, president of Northrop Carolina, Inc. for the past 18 months, will succeed Mr. Nolan as senior vice president of Administration upon Mr. Nolan's retirement. In the interim, Mr. Douglas will serve as a senior vice president and advisor to the president from January 1 until April.

Mr. Nolan



Mr. Douglas

Succeeding Mr. Douglas as president of Northrop Carolina will be James M. Ricketts, deputy manager of the Anaheim department of the Nortronics Division. Mr. Ricketts' appointment was effective November 15. In his new capacity, he will report to Frank Lynch, vice president and assistant general manager, Anaheim department of Nortronics.

Mr. Ricketts

"Mr. Nolan has led in a great many of the actions that have enabled Northrop to grow from a small company of only 50 employees to one of more than 25,000," Mr. Jones said in making the announcement.

"One of the original employees of the company, Mr. Nolan's progress from Tooling supervisor through the ranks of management to Corporate vice president and Division manager and later to senior vice president has been in the best tradition of the American system. The company is

(See DOUGLAS, page 6)

Quarter Century Club Schedules Annual Meeting

The Nortronics California Quarter Century Club will hold its annual meeting and installation banquet, November 26 at the Alfred Restaurant, 700 East 45th Street, Long Beach.

Membership in the veteran Northrop group includes all who have worked for the company for 25 years. This includes not only those now working for the company, but also retirees and those no longer connected with Northrop.

In addition to the dinner and reminiscence about old times, the program includes installation of eight new members. Frederick Stevens, vice president and Nortronics general manager, will make service award presentations to the new members.

The festivities start at 6:30 with dinner at 7:30.

Bloodmobile Visit

Northrop Corporation's annual pre-Christmas bloodmobile visit is set for December 4. Hours of operation at the Plant Two blood bank will be 9 to 11:30 a.m., 12:30 to 2:30 p.m.

Northrop personnel in the Hawthorne complex, plus Mariposa, will serve as volunteer donors. All are invited to drive to the facility, if possible.

Traditionally, the upcoming holiday season brings a high demand for blood due to a large number of surgery cases scheduled, accidents and other factors, according to Marie Tully, Welfare administrator.

NEWLY ELECTED NRC officers of the Nortronics Hawthorne Palos Verdes Council (photo at left) are President Richard Teel (center right) being congratulated by outgoing president Richard Paramore. At left is Otha Stubblefield, sergeant-at-arms. Edward Wojnar (right) is the new vice president. Seated are Dorothy Baldwin (left) secretary, and Jeanne Andrecht, treasurer. In the photo at right are Nortronics Anaheim electees (from the left) Gaylord Miller, treasurer, Don Taylor, sergeant-at-arms; Marv Wiebe, vice president, and Vaughn Peak, president. Seated is Donna Robison, secretary.

NRC Councils Select Officers For Coming Year

Nortronics NRC Employee Councils have elected officers in two separate elections held for Hawthorne, Palos Verdes and Anaheim.

Richard Teel was elected president of the Hawthorne Palos Verdes NRC with Edward Wojnar, vice president; Dorothy Baldwin, secretary; Jeanne Andrecht, treasurer; and Otha Stubblefield, sergeant-at-arms.

Richard Paramore, outgoing past president, will serve on the executive committee as immediate past president.

The election was held at the Mayflower Ballroom, Inglewood, immediately preceding the annual Fall Fling dinner dance.

Heading NRC at Anaheim is

(See ELECTIONS, page 6)

NORTHROP NEWSMAKERS

D. D. Gregor, Norair, will discuss "Operational Capability Analysis", December 2-6, before a UCLA Engineering and Physical Science extension group.

* * *

Dr. Sylvan Katz has joined the staff of the chief scientist, Northrop Corporate Laboratories. He has served as manager of the theoretical physics department of the Aeronutronic Division of Philco-Ford. Dr. Katz holds degrees from Yale and Columbia Universities and earned his doctorate in 1960 from UCLA. He is a member of the physics department at the University of California — Irvine.

* * *

Cecil M. Callaway, Norair, has presided at the presentation of participation awards made during the annual conference of National Association of Suggestion Systems in Pittsburgh. Mr. Callaway is a director of NASS.

* * *

Colonel A. Paul Fonda, USAF retired, now a member of the International group in Northrop's Eastern Regional office, received the Air Force Legion of Merit for his previous work as chief, Reserve Headquarters, Headquarters USAF.

Presentation was made to Colonel Fonda by Air Force Chief of Staff General John P. McConnell in a Pentagon ceremony attended by Mrs. Fonda.

The citation said that Colonel Fonda's outstanding service resulted in significant contributions to the effectiveness and success of the Air Force Civil Air Patrol program.

* * *

Bob Wondka, Ventura, addressed the American Society of Tool and Manufacturing Engineers, Ventura/Santa Barbara sub-chapter 27, at their dinner meeting at Camarillo last week. He spoke on the history of the space program in general and talked specifically of Northrop Ventura's contribution of the Earth Landing System in relation to the total Apollo program.

* * *

Herb Dugger, Norair, has received a special Certificate of Merit from Toastmasters International for the successful completion of that group's basic speech training program. Mr. Dugger is a member of the San Pedro Toastmasters.

LEGION OF MERIT presented to Colonel A. Paul Fonda, USAF retired, is admired by General John P. McConnell, Air Force chief of staff and Mrs. Fonda. Colonel Fonda, a member of the International group in Northrop's Eastern Regional office, was cited for his performance as assistant to the chief of Air Force reserve headquarters, USAF Headquarters, from 1965 to 1968. Special mention was made of Colonel Fonda's contributions to the USAF Civil Air Patrol Program.

Page Wins Three Communication Systems Pacts

Northrop's Page Communications Engineers has received three contracts totaling more than $38 million during the past month for installation of long-range communications systems in Europe and South America.

For the Voice of America, Page will build a series of radio stations and transmitters at Kavela in northern Greece under a $15.8 million contract.

Also in Greece, the Northrop Page associate firm, Page Europa, S.p.A., has won a $12.7 million contract to install a television and FM radio broadcasting system.

Under the third contract for $10 million, the Northrop subsidiary will improve and expand the telephone system in the state of Bahia, Brazil.

Wanderers Hold Ranch Campout

Over the Thanksgiving weekend members of the Northrop Wanderers will hold their annual campout at the KOA Ranch, Victorville.

The ranch features a heated swimming pool, with nearby facilities featuring trout fishing, golf, rockhound areas, horseback riding and a variety of other attractions.

DANCE CLASSES

Students will be accepted for the next two weeks in a new series of ballroom dancing classes opening this week under NRC sponsorship in the Hawthorne area.

Held at the VFW Hall, Hawthorne, the classes offer Cha Cha at 8 p.m. and western swing at 9:30 p.m. Sessions are held each Tuesday for 10 weeks.

Addresses Need to Be Kept Current

Maintaining a current residence address and home telephone number for each Northrop employee is important, both for the welfare of personnel and sound business practices.

As an example, Northrop will mail W-2 tax forms necessary for filing state and national income tax reports shortly after the first of the year. Other communications are mailed to the home periodically. And current telephone numbers aid immediate contact in cases of extreme emergency. Change of address forms are available through all Northrop Personnel offices. Or an employee may dispatch a memo to applicable Personnel offices listing his/her full name, employee number, street address, city, state, zip code and home telephone numbers.

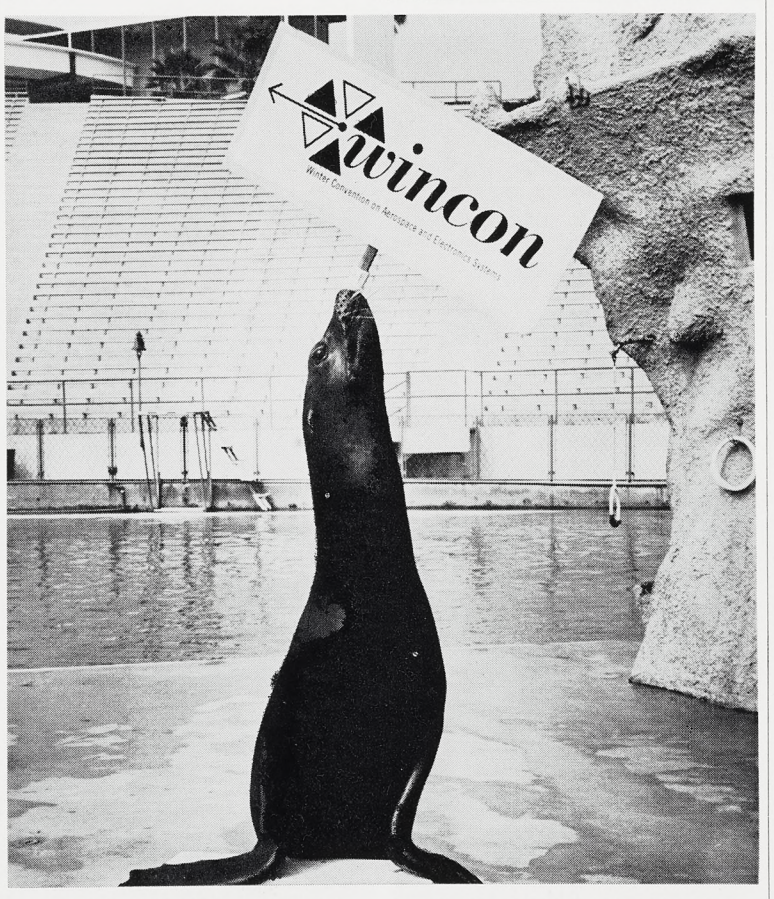
Big Preview of Electronics Set For WINCON

WINCON — the 1969 Winter Convention on Aerospace and Electronics Systems—will provide a preview of the electronics of the 1970's, according to Lloyd K. Jensen, assistant to WINCON general manager Frederick Stevens.

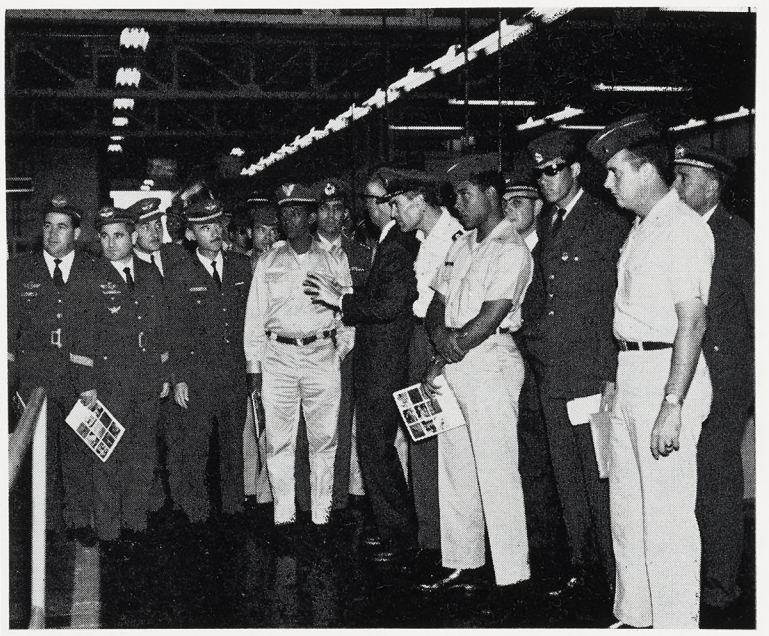
"Attendees will learn the latest in medical electronics, telecommunications, air traffic control, satellites, new avionics, solid state radar, modern naval ships, and more," Mr. Jensen said.

The convention will be held from February 11 through 13 at the Biltmore Hotel, Los Angeles.

Technical sessions for the convention will be co-sponsored by the Los Angeles Council of the Institute of Electrical and Electronic Engineers and the Aerospace and Electronics Systems group.



SANDY THE SEA LION from Marineland of the Pacific takes this means of pointing out that WINCON, the 1969 Winter Convention on Aerospace and Electronics Systems, plans a well-balanced program that will provide something of interest to every attendee. The convention, largest of its kind on the West Coast, will be held from February 11-13 at the Biltmore Hotel in Los Angeles.



ALLIED OFFICERS from eight nations and the United States are shown touring the Norair F-5/T-38 assembly line. The officers from allied nations are currently engaged in F-5 MAP training activities at Williams AFB, Arizona, and called at Norair in conjunction with that training.

Allied Military Officers Call at Northrop Norair

Northrop Norair took on the aspects of a small United Nations November 1 with the visit of 42 military representatives from eight allied nations.

Visitors hailed from Ethiopia, Iran, Jordan, Libya, Morocco, Norway, Spain and South Vietnam.

They were taking part in a tour conducted in conjunction with the Foreign Training Office at Williams AFB, Arizona, for Military Assistance Program personnel. All are currently engaged in F-5 MAP training at Williams.

Wally Reese, Norair director of Customer Relations Plans and Programs, was host for the visit. Following introductions and discussions, the visitors saw a special slide presentation, three films, and the F-5/T-38 assembly area during a special tour prior to lunch and departure.

THANKSGIVING HOLIDAY NEAR

Northrop Corporation personnel throughout Southern California will enjoy a four-day holiday next week in observance of Thanksgiving.

Thursday, November 28, and Friday, November 29, will be coupled with Saturday and Sunday to provide this special long period of time off. Regular shifts will resume December 2.

Bowlers Sought For Christmas Keg Tourney

Entries will be accepted through December 6 for the 15th annual All-Northrop Christmas bowling tournament set for December 28-29 at Tropicana Lanes, Inglewood.

This big event, which traditionally draws keglers from all Northrop facilities in the Southland, will feature singles and doubles events for men and women, plus mixed doubles. Entry fee is $2.65 per event.

Squad times December 28 are noon, 2 and 4:30 p.m.; December 29, noon, 1 and 4:30 p.m.

Entry forms are now available at all Northrop Personnel Activities outlets.

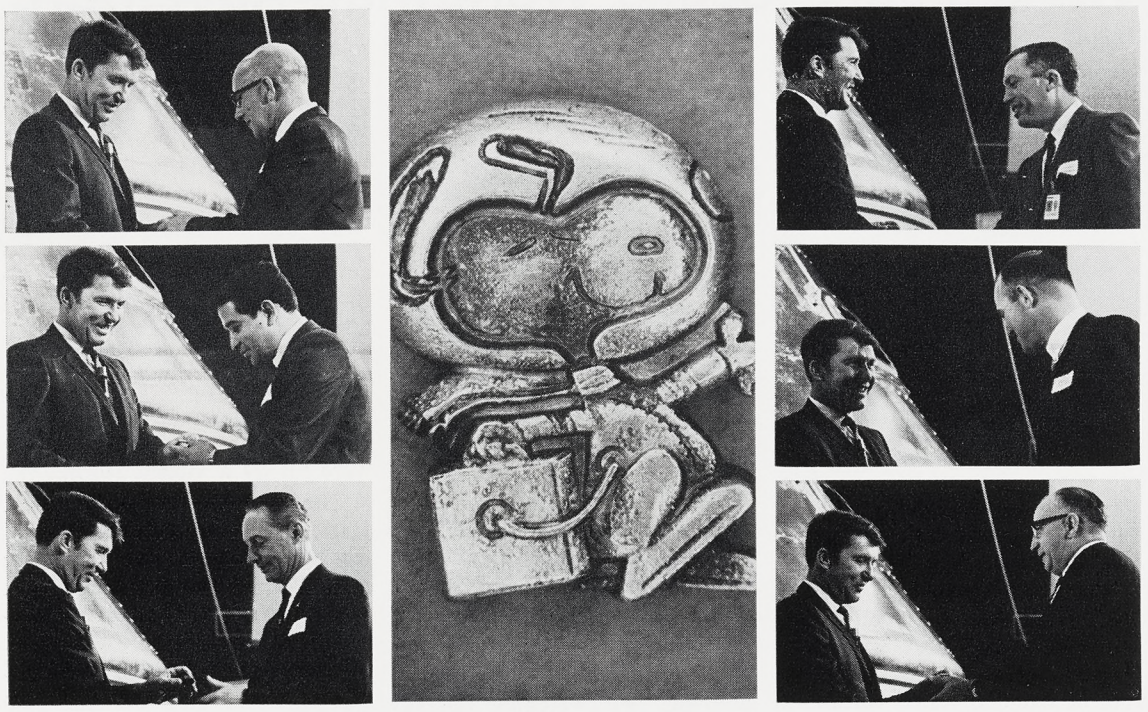
Page Will Build Earth Station at Site in Lebanon

Receipt of a $2.75 million contract to build an earth communications station in Lebanon has been announced by Page Communications Engineers, Inc., a Northrop subsidiary.

The contract was let by the Republic of Lebanon Ministry of Post, Telegraph and Telephone. Operating through the Intelsat satellite, the station will carry voice channels, telegraph, teletype, high speed data and color television transmissions. It will be completed in 1970.

Ground was broken for a similar station in Iran recently, while a third station, in Panama, became fully operational in early October.

Northrop Families View Historic Apollo 7 Spacecraft



SNOOPY PINS, the astronaut's personal symbol of individual excellence in contribution to the Apollo program, were presented to six Northrop Ventura men by Walter Schirra, Apollo 7 spacecraft commander. Receiving pins from top left counter clockwise are Oscar Cease, Santiago Colunga, Dick Kipp, Gary Porter, John Simpson and Bob Wondka. Enlarged pin is shown center above. Presentations were made at North American Rockwell's Downey facility.

Apollo 7 Astronauts Present Snoopy Pins To Six Northrop Ventura Program Veterans

If the well laid plans of the National Aeronautics and Space Administration go according to schedule, Apollo 8, with its three-man crew, will be launched December 21 toward 10 orbits of the moon and a return to earth six days later.

The decision to "go" with Apollo 8 at this time was announced last week by NASA officials.

So, it may very well be Christmas around the moon for Astronauts Frank Borman, James Lovell and William Anders. Mr. Borman and Mr. Lovell are spaceflight veterans, holding the record for the longest flight ever made. They orbited the earth for two weeks in Gemini 7. Mr. Anders will be making his first trip into space.

Meanwhile, as Apollo 8 was being readied, Apollo 7 was still being applauded. Tens of thousands of employees, families and guests of North American Rockwell's Space Division in Downey were treated to a close-up view of the Apollo 7 spacecraft command module barely 10 days after its splashdown.

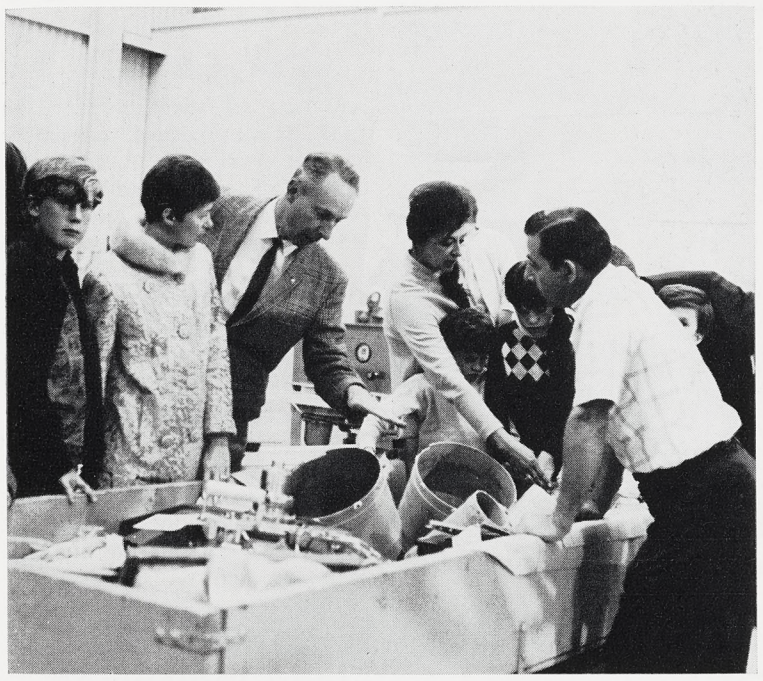
From Northrop Ventura, the families of many of those directly concerned with the conception, design and manufacture of the Apollo Earth Landing System made the trip to see what their efforts had wrought.

Later, six from Northrop Ventura were presented Snoopy Pins—the astronaut's personal symbol of individual excellence in contribution to the program. The pins feature the comic strip character, "Snoopy", the dog from the syndicated "Peanuts" series by Charles Schulz. Mr. Schulz granted permission for use of Snoopy's image in connection with the astronaut's award program.

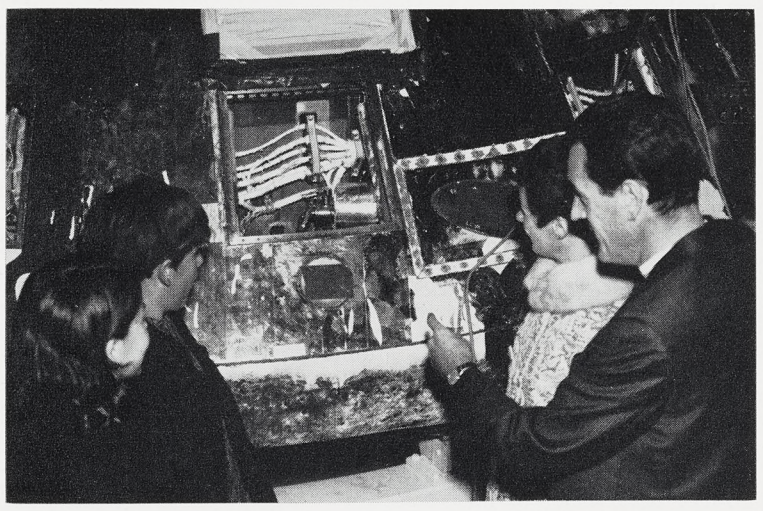
It was at Downey, again, that Oscar Cease, Santiago Colunga, Dick Kipp, Gary Porter, John Simpson and Bob Wondka received their awards from Astronauts Walter Schirra and Walter Cunningham. It was in Downey that they personally thanked all of those whose work contributed to a nearly perfect space mission.

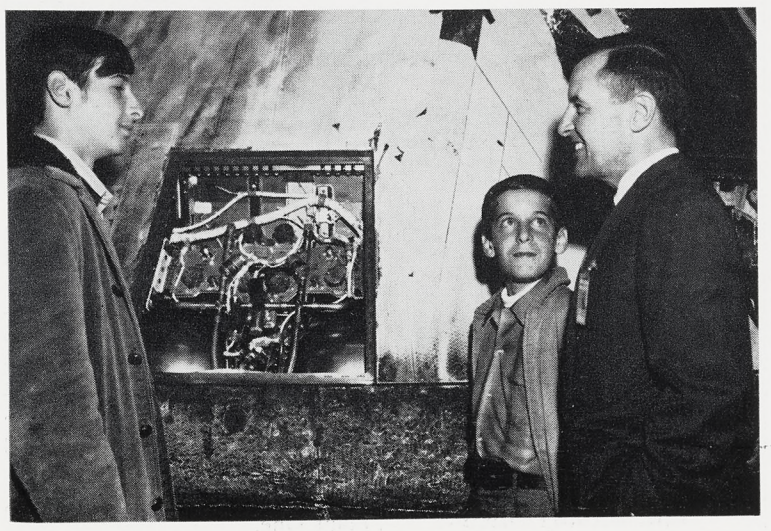
But, Northrop's contribution to Apollo 7 extends beyond Ventura to the Airborne Lightweight Optical Tracking System (ALOTS) developed for the U. S. Air Force by the Nortronics Division at Palos Verdes. It was ALOTS which photographically tracked the spacecraft from launch through the earth's atmosphere with a 70 millimeter high resolution camera externally mounted in a KC-135 aircraft.

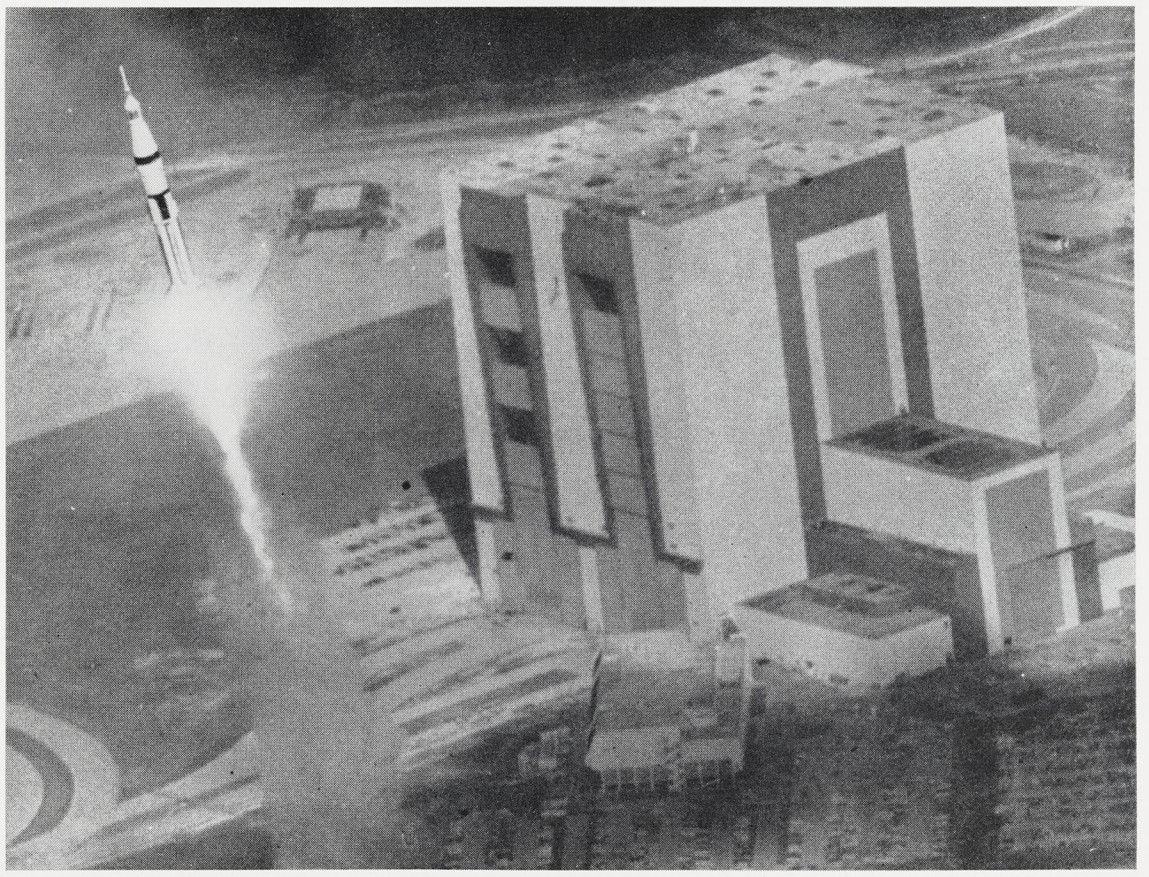
Also, in a joint venture with Brown & Root at Houston, Texas, Northrop was assigned responsibility for operational support of the Lunar Receiving Laboratory at NASA's Manned Spacecraft Center.



HOME FROM SPACE—When the Apollo 7 spacecraft was returned to North American Rockwell's Downey facility, select Northrop Ventura men and their families were invited to view it. At left above, Dick Kipp explains how components from the disassembled Ventura-built Earth Landing System function. At right above, Bob Wondka and his family gaze upward at the spacecraft's open hatch. Those invited played key roles in the design and development of the Earth Landing System.







BEFORE AND AFTER — Nortronics-built ALOTS system made the striking photo above as the Apollo 7 launch vehicle cleared the pad at Cape Kennedy en route to space. ALOTS provides above-the-weather resolution photograph tracking for launches. At left above, Bob Boulanger points out Apollo 7 wiring system to his family. Left below is John MacCarley and his sons reliving a moment in history with the charred Apollo 7 spacecraft.

Have You Made Special Plans For The Thanksgiving Holidays?

Mrs. Randel

Fran Randel, switchboard operator, Nortronics Anaheim:

I'm planning an outdoor Thanksgiving Day dinner. My family and I are taking our camper with the NRC Sundowners Club to Anzio Borrego Springs. The turkey is going with us. I don't know how I'll cook it, but I'll find a way. Roasted over a campfire if nothing better comes along.

Mr. Howard

Art Howard, engineering coordinating analyst, Norair:

I guess you could say I'll be doing something special. I'm going to San Francisco to scout for talent for my new part-time talent consultant service. I'll be looking for singers, dancers, models and other talent for MGM Studios.

Miss Boicourt

Martha Boicourt, IBM keypunch operator, Ventura:

I plan to be married shortly before the holidays so by the time our people are reading this I'll be on my honeymoon, probably somewhere near the ocean. But, I'll be back at the job in December.

Barbara Andreen

Barbara Andreen, secretary, Norair:

I have a cousin in New York whom I haven't seen for nine years who'll be coming for our Thanksgiving reunion with his wife and two children. Also, I'll have my aunt, uncle and two grandmothers plus another cousin with his wife and five children. Then there's my mother and my three children and dog who is due to have puppies before Thanksgiving. She always has seven. That makes about 27 for dinner.

Mr. Basford

Harry J. Basford, Indirect Budget, Nortronics Palos Verdes:

I have no special plans other than that I consider every Thanksgiving special. I'm a traditionalist. I plan to have turkey with all the trimmings along with the company of my family and friends. I'll find another time to travel.

Mrs. Millner

Tishia Millner, Paint Shop, Ventura:

We have friends in Torrance who have the same wedding anniversary date as my husband and I and every Thanksgiving we alternate sharing our dinner together. This year they're coming to our house in Oxnard.

YOUNG ANAHEIM LENSMAN WINS HIGH HONORS IN COUNTY FAIR COMPETITION

Michael Fredette, son of Al Fredette, horizontal jig bore mechanic at Nortronics Anaheim, took 30 out of 35 possible points in the Los Angeles County Fair photography competition.

Michael's prize-winning photograph of a tongue-licking cat was taken with a Miranda camera he bought on advice of the NRC Camera Club.

According to his father, Michael decided exactly what he wanted in the picture, set up the camera and then waited patiently for two-and-a-half hours for the cat to assume just exactly the right pose.

Originally the sixteen-year-old boy was interested in astronomy. He asked Harry Dent, NRC Camera Club commissioner, for advice about a camera to use in taking pictures through his telescope. He had no previous photographic experience, but became so enthusiastic over the camera that he now wants to be a professional photographer.

LAST HAWAII TOUR MEETING BOOKED

Northrop travelers planning to take part in NRC-sponsored tours to Hawaii over the long yearend holiday will hold their final organizational meeting December 6.

This meeting, set for Dandel's Restaurant, 12000 Western, Los Angeles, at 8 p.m., will provide final information and cover tour highlights.

Two options are open, a 12-day tour departing December 21 and an eight-day tour departing December 25. A few openings are available on the latter and a standby list is being maintained on the former.

Tour brochures and information are available at all Northrop Personnel Activities outlets.

VOLCANOS TO WHALES

Hank Young Seeks Worldwide Adventure

Hank Young likes places no one has been before—and the urge has taken him from an almost inaccessible lake in Costa Rica to the slope of an erupting volcano.

In between he visited a unique island prison in Mexico, got chased by a sea elephant on uninhabited San Benito Island, and made the first pictures of a "flying" manta ray. His adventures have been recounted in **Life, True,** and the TV program, **I Search for Adventure.**

Hank, now with the Deep Submergence Systems Project, Palos Verdes, joined Northrop in 1951. Eighteen months later he quit to seek adventure in a 38-foot boat.

The first adventure was making the first photos of a remote lake in Costa Rica. Then with John Pugsley, whom he met at Northrop, he climbed Izalco volcano in El Salvador, Central America.

Izalco is an explosive type volcano. It does not erupt lava, but hurls out a constant rain of rock. The two adventurers decided to risk the falling rock. They started climbing, one watching the sky for falling rock while the other kept watch for larger boulders rolling down the hill. Thus dodging and climbing, they got to the protection of a basalt outcropping two-thirds up the cone. It was farther than anyone had climbed before.

ERUPTING VOLCANO, a photo taken by Hank Young from a position closer to summit than anyone had dared to go before.

Under partial protection of the outcropping, they made pictures and—more important scientifically—tape recordings of the subterranean rumblings.

By this time it was night. A descent was impossible. They set up camp. Shortly after witnessing a spectacular night eruption, they were hit by a violent storm.

The tent was knocked down. Hank fell on his cameras to protect them from the pounding rain. Despite the gale wind, rain, bitter altitude cold, and hot falling rock, they survived the night. In the morning they climbed down. Soon after they left the protective outcropping, it was smashed by a giant incandescent boulder.

The adventure was described in **True Magazine.** It later won an award as the best TV adventure film of the year.

Hank returned to Northrop in 1958 and now confines his adventuring to vacation time. In 1957 he was elected a member of the exclusive Adventurer's Club. He is also a member of the Seven Seas Cruising Association. He lives with his wife, Diane, and a Siamese cat on a boat anchored at Redondo Beach with the world's biggest backyard — the Pacific Ocean.

His latest project is a Christmas expedition to a remote bay in Baja California, where gray whales migrate. After this he has other plans. He doesn't know where yet—but doesn't care just so it is so remote no one has been there before.

HANK AND DIANE YOUNG WITH FRIEND

Armstrong Takes National Sabot Sailing Championship

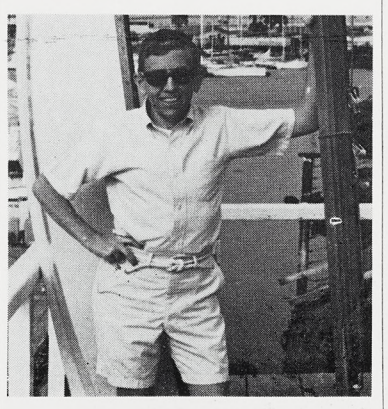
Sailing a national class one design fibreglass boat he built at home, Thomas Armstrong took the Windward Sabot National Sailing Championship in a competition held at Channel Islands Marina, Oxnard, in October.

Mr. Armstrong competed against 50 other sailors in a "round the buoys closed course." He came in with one first place finish and four second place finishes in a five race series to win on total points.

After the race, he said, "It was a great experience to win against such intense competition. Part of the pleasure is knowing I succeeded in building a boat of championship caliber, as this was my first attempt at boatbuilding."

This is his first championship in only two tries at national competition. He is also his yacht club's current Sabot class winner. He won in this class for the last two years.

Mr. Armstrong taught himself the basic skills of sailing by using rental boats at Newport Beach. After that, he bought an all teak 20-foot sloop which he owned for five years. During the last year he raced the sloop, he won all of his club's races with it.



MR. ARMSTRONG

Red Cross Will Send Messages To Servicemen

Northrop families with a man or woman in military service overseas or in a military hospital may send him a free seven-minute recorded message or greeting through a special American Red Cross service.

Red Cross Voices From Home messages are made possible by Northrop employees' contributions to AID-UNITED GIVERS.

Red Cross Service Centers in Inglewood, Los Angeles, Pasadena, San Pedro, South Gate, Van Nuys, Westwood and Whittier, will record the message and make a polaroid photo to accompany the message. Servicemen can make arrangements to play the recording through Red Cross facilities at their base.

Contact any Red Cross Service Center for information.

Summer Visitor Finds Inglewood 'Kindness' Tops

Inglewood, California, the home of many Northrop Corporation employees, received a special pat on the back in the "Letters" column of a recent New York Times edition.

In her letter, Mrs. Betty Kunofsky of Brooklyn, an Inglewood visitor last summer, enclosed a copy of a parking citation she received. It welcomed the recipient to Inglewood, explained the number of free parking lots available, noted a violation had occurred, and promptly forgave it. In addition, the citation invited the recipient to have a free cup of coffee at any one of a number of Inglewood restaurants.

Mrs. Kunofsky added: "It proves that, in certain parts of our country, visitors are treated with kindness, too."

Rose Bowl Parade Trip Set by NRC

Northrop Recreation Club has arranged a special bus excursion to Pasadena's annual Tournament of Roses January 1.

The $9 per-person charge includes roundtrip bus transportation and grandstand seats on the front lawn of Pasadena City College. The price does not include admission to the Rose Bowl grid classic.

Contact Personnel Activities, Plant One.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Pickup, 1967 Chev., custom cab, 283, 3-spd., hvy. duty equip., 10,000 mi., $2,100. 213-284-0768. A

Mercedes Benz, 1969 220 diesel, auto. trans., $4,550. 213-377-1075. A

Pontiac, 1964 convt., p/s, p/b, $895. 714-639-1365. A

Station Wagon, 1959 Chev. Parkwood, $350. 213-294-2810. A

Porsche, 1959, $1,795. 213-324-9373. A

Porsche, 1967 912, 4-spd., chrome whls., $4,500. 213-439-4600. A

Mustang, 1966 G.T. h/top, many extras, $1,900. 213-472-3625. A

Pickup, 1964 Ford, custom cab, V-8, 192 eng., r/h, $1,095. 714-827-7189. A

BMW, 1960, 700 sedan, 4-spd., $200. 213-395-5832. A

El Camino, 1959, 327 Hydro, $700. 213-679-8397. A

Pickup, 1960 Falcon Ranchero, ¼-ton, $600. 213-677-4410. A

Buick, 1967 Riviera, fully equipped, $3,900. 213-672-7167. A

Volkswagen, 1966 1300, radio, $1,295. 213-346-3751. A

Pickup, 1957 Chev., $475. 213-326-8386. A

Oldsmobile, 1964 F-85 Cutlass, Sport Cpe., p/s, p/b, $900. 213-673-1566. A

Station Wagon, 1965 Chev., a/c, $1,900. 213-379-8090. A

Pickup, 1964 Chev., ¾-ton, 4-spd., a/c, hvy. duty suspension, many extras, $1,400. 213-376-7849. A

Ford, 1959, auto., $200. 213-323-7509. A

Mustang, 1966, 6-cyl., auto. trans., 8-track stereo tape, $1,500. 213-329-9046. A

Chevrolet, 1965 Impala, 4-dr. h/top, 327, auto., p/s, p/b, r/h, $1,350. 213-676-9488.

Ford, 1955 Fairlane, 292 V-8 eng., auto. trans., r/h, $200. 213-675-7403. A

T-Bird, 1963, p/s, p/b, a/c, $975. 213-325-3724. A

Station Wagon, 1957 Chev., $275. 213-329-5079. A

Pontiac, 1957 4 star Star Chief, r/h, p/b, p/s, auto. trans., $195. 213-644-6718. A

MGB, wire whls., many extras, $1,675. 213-670-3762. A

Dodge, 1960 4-dr. Phoenix, r/h, auto. trans., $295. 213-754-8092. A

Station Wagon, 1958 Plymouth, 9-pass., $295. 213-379-7342. A

Mustang, 1966 2+2, 4-spd., big eng., $1,695. 213-377-7670. A

MG TD, 1953, new clutch & trans., $850. 213-328-1987. A

Station Wagon, 1966 Ford, Country Sedan, p/s, stereo, auto. trans., $2,200. 714-871-1990. A

Ford, 1968 Galaxie, 2-dr., Landau top, p/s, r/h, auto. trans., p/disc brakes, 390 eng., $2,800. 714-549-3190, 213-672-0426. A

Lincoln, 1961 Continental, full power, $1,000. Box 2301. A

Buick, 1959 2-dr. h/top, full power, a/c, $595. 213-326-1856. A

Chevrolet II, 1966 Nova, 2-dr. h/top, auto. trans., $595. 213-862-3027. A

T-Bird, 1961, all power, $800. 213-324-6484.

Chevrolet, 1965 Impala S.S., 2-dr. h/top, 327 V-8, auto. trans., p/s, p/b, fact. air, r/h, $200 & take over $76 mo. pymts. or $2,000. 213-674-8114. A

Morgan, 1965 4 rdstr., heater, AM/FM radio, extras, $3,000. 213-396-3594. A

T-Bird, 1957, all power, h/top, w/portholes, r/h, $1,600. 213-679-7840. A

Comet, 1961, 2-dr., 6, stick, $225. 213-374-8358. A

Station Wagon, 1962 Chev. Impala, 6-pass., auto. trans., r/h, p/s, a/c, $750. 213-476-1842. A

Cadillac, 1959 sedan DeVille, a/c, p/b, p/s, $475. 213-828-3268. A

Datsun, 1967 1600 roadster, $1,700. 213-830-6038. A

Buick, 1962 Electra 225, 2-dr. h/top, fully equipped, $850. 213-324-2992. A

Chevrolet, 1955 4-dr., V-8, auto. trans., $100. 213-756-1623. A

Chevrolet, 1965 Super Sport, auto. trans., p/s, radio, $1,695. 714-826-2209. A

Mustang, 1967 Fastback, 289 2+2, p/s, fact. air, auto. trans., $2,150. 213-672-3724. A

Pickup, 1962 Ford, ½-ton, $795. 213-676-0726. A

Plymouth, 1959 Belvedere, 2-dr., auto. trans., V-8, $250. 213-846-5589. A

Chevrolet, 1957, 2-dr., eng. needs work, $125. 213-672-5872. A

Chevrolet, 1958, V-8, 4-dr., p/s, auto., $300. 213-675-6963. A

Volvo, 1959, 4-spd., r/h, $375. 714-839-3058.

Automobiles For Sale

Corvette, 1967 395 h.p., 427 cu. in., 4-spd. trans., radio, 2 tops, posi. rearend, $3,800. 213-776-3617. A

Station Wagon, 1960 Ford Country Sedan, p/s, p/b, r/h, auto. trans., 352, 4-bbl. carb., $200. 213-370-2876. A

Falcon, 1963 Futura, 4-spd., $750. 213-676-2803. A

Austin Healey, 1959 Sprite, good tires, $450. 213-674-9627. A

Household Items For Sale

Rug, 9x12 beige, wool, $20. 213-327-6918. B

Davenport, brown, 9', $50. 213-833-9829. B

Stove, Gaffers & Sattler, 31", bronze-top, $75. 213-677-6948. B

Desk, 40"x18½", maple, 7 drwrs., pad & chair, $15. 213-329-2016. B

Coffee Table, Lane, oiled walnut, 6' long, $35. 213-377-9666. B

Mattresses for bunk bed, $25. 213-831-2878.

Couch, 8' modern, newly uphol., $80. 213-962-2121. B

Refrigerator, frostless, 16 cu. ft., 1 yr. old, coppertone, $200. 213-327-3795. B

Bed, dble., foam mattress, box spring & frame, $40. 213-826-4172. B

Range, Gaffers & Sattler, gas, $65. 213-644-8075. B

Range, 6-burner, dble. oven, $80. 213-755-8542. B

Dishwasher, portable, RCA Whirlpool, white, 3 mos. old, $150. 213-679-0555. B

Dishwasher, portable, 1967 GE, white, $90. 213-645-5786. B

Refrigerator, 9 cu. ft., Admiral, $25. 213-679-7996. B

Dryer, Sears Kenmore 500, gas, 6 mos. old, $120. 213-644-8115. B

Dryer, Speed Queen, gas, $45. 213-374-4944.

Washer, Maytag, auto., $100. 213-678-6071. B

Washer, Kenmore, $20. 213-370-4475. B

Box Spring, mattress, frame, twin size, $15. 213-823-1910. B

Dishwasher, Kitchen Aid portable, white, $150. 213-322-5930. B

Dinette Set, chrome, 4 matching chairs & 2 odd chairs, $30. 213-542-4091. B

Hutch, Salem maple, w/extending table, seats 10, $100. 213-862-8215. B

Desk, 40x20, 2 drwrs., 2 shelves, black w/ gold tole design, matching bench, $25. 213-378-2369. B

Couch, Early American & chair, take over $17.42 mo. pymts. or $245. 213-835-3665. B

Refrigerator, 10 cu. ft. Admiral, coppertone, $65. 213-541-1226. B

Sewing Machine, White elec., mahogany cabinet, $35. 213-752-6379. B

Box Spring, queen size, mattress, $75. 213-661-0515. B

Dining Room set, wood, lge., extension, $35. 213-371-6775. B

Mattress, Simmons, box springs & frame, few mos. old, $90. 213-674-8361, 213-645-8067. B

Dresser, child's, Bassett, $50. 213-376-4831.

Rug, 12'x13" beige wool, w/pad, $50. 213-644-7179. B

Miscellaneous For Sale

Ski Boots, men's, Austrian, size 10, $50. 213-545-6847. C

Surfboard, Jacobs semi-speed, 9'6", $75. 213-676-4492. C

Exerciser, Stauffer, $95. 213-325-6546. C

Violin, w/case, $75. 213-679-2864. C

Saber Saw, $7.50. 213-324-4817. C

Chain Saw, hvy. duty, 7½ h.p., less than 10 hrs., $150. 213-532-6109. C

Lot, Lake Arrowhead, ⅓ acre, country club privileges, utils. & sewers in, trade 2nd t.d., $10,500. 213-457-9186. C

Rifle Scope, Bushnell 3-9 variable, w/mounts, $25. 213-860-2305. C

Acreage, 2½ acres, Antelope Valley, $42 dn., $42 mo., no int. $4,200. 213-378-1026.

Airplane, Cessna 140, all metal, 270 hrs. s.m.o.h., 2 radios, $2,350. 213-839-6084. C

Fencing, 50' x 36" lath & wire, $10. 213-370-7092. C

Camera, Miranda D w/f1.5 auto. 50mm & 135mm telephoto lens, $100. 213-377-4230. C

Slide Projetcor, Braun, 35mm, $75. 714-523-2495. C

Piano, black enamel, w/mirror, cut down upright, bench, $225. 213-324-7730. C

Motorcycle, Honda 305 Super Hawk, $150. 714-673-5587. C

Hi-Fi-Phono. Set, Trompect console, $35. 213-757-5181. C

Motorcycle, Lilac LS-18, 250 cc, $200. 714-521-5359. C

House, 2-bdrm., on 45x140 R2-1 corner lot, close to Northrop, $22,500. 213-675-6895. C

Tires, 2 8.25x14, on 5-hole Ford rims, $25. 213-377-1008. C

Sailboat, 9½' Teacup class, dacron sail, cartop carrier, $150. 213-321-1655. C

Camera, 35m Kowa SLR, f1.9, CD-S meter & case, $100. 714-637-0683. C

Razor, Norelco, triple header, mod. 35T, $12.50. 213-328-5655. C

Engine, 368 cu. in. Lincoln, 100 miles since reblt. & Fordomatic trans., $450. 213-676-3095. C

TV, 23" b&w, Danish walnut console, remote control, $75. 213-326-5731. C

Motor, Johnson, 1968 10 h.p., w/cart & 2 gas tanks, $300. 213-672-4447. C

Miscellaneous For Sale

Mini Bike, 3 h.p. eng., brakes & fenders, $95. 714-847-0648. C

Motorcycle, 1962 Triumph Bonneville, 650 cc, $675. 213-644-3126. C

Movie Camera, exposure meter, Bell & Howell, $7.50. 805-495-9647. C

Air Conditioner, portable elec., water cooled, stand on rollers, $20. 714-528-2382. C

Boat, 16' Glasspar Avalon custom, 75 h.p. Johnson electramatic motor, American trailer w/15" whls., $1,400. 714-595-4500. C

House, 2-bdrm., on R-3 lot, Hawthorne area, $16,500. 213-645-9522. C

Saw, Craftsman 8", incl. 5 blades, 1 h.p. h/d motor, extras, $100. 213-371-1086. C

Organ, walnut, Gulbransen console, transis., full size keyboards & pedal, $1,500. 213-721-4363. C

Tires, Firestone 500, 7.75x14, tubeless, w/w, $35. 213-679-5165. C

Lot, 82'x330', level, electricity, water, near Lake Isabella, $2,500. 714-532-1361. C

Airplane, 1966 Cherokee 140, 4 seats, 960TT on 2,000-hr. eng., full panel, Mark 12, lease back avail., $7,500. 213-373-4153. C

Water Tank, 20-gal., used approx. 1 mo., $20. 805-497-3101. C

Saxophone, B-flat tenor, Beuscher, $135. 213-377-3806. C

Snare Drum, Gretsch, 8 lugs, case & stand, $50. 213-325-3452. C

Lot, Lake Elizabeth, 50'x101', 2 water shares & lifetime club membership, $2,500. 805-482-7026. C

TV, 24" console, Packard Bell, Danish modern, AM-FM radio, phono., solid walnut cabinet, $150. 213-675-2735. C

Skis, bindings, boots & poles, for 4-6 yr. old, $6. 213-377-6648. C

Camera, Argus C-3, leather case, flashgun, Soligor 135mm f:4.5 telephoto, $45. 213-835-4957. C

Bunks, 2 foldup type, $25. 213-327-8927. C

Motorcycle, 1965 Honda Super 90, $160. 213-293-9594. C

Pups, beagle, AKC reg., $40. 213-675-3931.

Motorcycle, 1966 Triumph Bonneville, 650 cc, $900. 213-363-3843. C

House, 3-bdrm., 2 baths, bltins, h/wood floors, f/place, sprinklers, fenced yd., $1,550 dn., FHA, $22,850. 714-531-4287. C

Lot, improved, over 1 acre, Palos Verdes Ests., $45,000. 213-375-2255. C

Ski Boat, Schiada, deep vee 17', 283 Chev., $2,800. 213-545-4783. C

Communication Receiver, Hallicrafters S-85, $50. 213-426-4060. C

Train Layout, H.O., approx. 60 cars, 5 engs., misc. equip. on 4'x10' panel, $80. 213-291-0025. C

Go Cart, $110. 213-374-8608. C

Trailer, 15½' Field & Stream, sleeps 5, $600. 213-371-3781. C

Receiver, Hallicrafters SX-99, 4 bands, w/ manual, $70. 213-839-5438. C

Honda, 1966 305 Scrambler, $350. 213-322-0246. C

House, 3-bdrm., 1¾ baths, dble. f/place, cpts., dps., recently repainted, $36,000. 213-371-9925. C

Guitar, elec., amplifier, $75. 213-323-4288.

Gun, Winchester Mod. 94, 30-30 custom recoil pad & sling, $85. 213-324-7442. C

Movie Camera, $15. 213-377-4317. C

House, 3-bdrm., family rm., 1¾ baths, bltins, f/place, patio, N. Torrance, $29,500. 213-323-6018. C

Walkie-Talkie, 1 set, Sony, $40. 213-327-5376. C

Stereo, walnut portable, AM-FM, all transis., $55. 213-327-2447. C

Cemetery Lot, 2, Pacific Slope sec. of Inglewood Pk., dble. interment, $875 ea. 213-370-7526. C

Pistol, 9mm Astra, mod. 600, holster, extras, $45. 213-679-1215. C

Mobile Home, 8'x27', awning o/patio, comp. furn., walking distance to Northrop, $1,000. 213-644-3084. C

Sailboat, 11' Centerboard, extras incl., $275. 213-325-4094. C

Pup, English pug, w/papers, had all shots, $150. 213-326-6195. C

Drafting Table, hvy. duty 48"x60" tilt top board, w/lamp, $50. 714-828-4942. C

Bicycle, girl's, 2-spd., $15. 213-429-7879. C

Mini Bike, 8 h.p. West Bend, $135. 213-393-5649. C

Pups, German shepherd, $25. 714-827-7415. C

Lot, 25'x100', Big Bear City, level, trees, paved road, all util., $1,350. 213-598-3072. C

Gun, 38 Colt, detective spec., steer horn grips & holster, $75. Box 2302. C

Road Race Set, Eldon 1/32 Gold Cup, extras, $15. 714-626-1597. C

Motorcycle, Triumph Bonneville, 650 cc, $575. 213-671-3907. C

Boat, 14' Glasspar Marathon, 50 h.p. Merc., Wallstrong trailer, extras, $930. 213-422-9035. C

Trailer, 16', Santa Fe, sleeps 6, seats 10, many extras, $795. 213-375-7265. C

Encyclopedias, complete Funk & Wagnall, $10. 213-675-7316. C

Motorcycle, 500 cc BSA, B34 single, $150. 213-423-5956. C

Baby Equipment, $60. 213-371-1949. C

Guitar, elec., w/amplifier, $65. 213-323-2289.

Guitar, Kawai concert, $55. 213-676-5291. C

Miscellaneous For Sale

Dog, Labrador retriever, female, 10 mos. old, AKC, $150. 213-347-6133. C

Piano, Clarendon upright, $175. 714-535-6990. C

Transceiver, Eico 753, factory wired, power supply, other misc. gear, $180. 714-639-4438.

Pups, cocker spaniel, AKC, $65 & up. 714-546-3839. C

Light Fixture, 3 lights, brass, goes w/maple, $15. 213-423-1363. C

Chain Saw, hvy. duty, Homelite, $95. 213-375-0915. C

Power Tool, Shopsmith, incl. saw, drill press, lathe, $135. 213-645-1523. C

Amplifier, Fender Bassman & bass guitar, Gibson solid body, $325 or sell sep. 213-329-4918. C

Snow Chains, hvy. duty, for 6.00-13 - 5.60-13 tires, $7.75. 213-377-5933. C

Engine, 1958 Imperial, 392 cu. in. Heml, Tourqeflite trans., $150. 213-370-4315. C

House, Rolling Hills Ests., 2-bdrm., convt. den, 2 baths, f/place, bltins, cpts., dps., $39,500. 213-375-8149. C

Engine, VW, 1500 cc displacement, complete w/all access., $200. 213-396-6739. C

Surfboard, 9'10", $75. 213-541-1944. C

Apt, 4-unit, 1 block from Norair, 4 yrs. old, low dn., $64,900. 213-675-5181. C

Hearing Aid, Zenith Delegate B, $100. 213-378-5175. C

TV, 23" b&w, stereo record player comb., Sears, $50. 213-672-2370. C

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., trailer, $795. 714-838-7161. C

Door, 42" solid core, w/hardware & Schlage lock, $30. 213-377-4198. C

Camlifters, Erson 320 F, for Chev., $40. 213-639-6653. C

Ski Boat, 14', outbd., hull & trailer, $400. 213-329-4414. C

Camera, Kodak, Instamatic, mod. 154, color outfit, used once, $19.95. 213-371-6328. C

Theatre Tickets, 2, N.Y.C. opera, Nov. 28, 8 p.m., Les Contes D'Hoffman in French, $10. 213-393-3837. C

Sailboat, 28' wooden sloop, inbd. eng., dacron sails, sleeps 4, $4,900. 213-378-4352. C

Home, 2-bdrm., 1 bath, kitchen remodeled, new paint, cpts., dps., dble. det. gar., lge. yd. w/brick walls, 10% dn. or take over existing loan and 6¾% int., $19,500. 213-323-2753, 213-325-0693. C

Home, Palos Verdes Pen., 4-bdrm., 2 baths, 8 yrs. old, new paint outside, G.I. financing 5¼%, $37,000. 213-676-5425. C

Motorcycle, Yamaha, 250 cc, $325. 213-322-5097. C

Wig, platinum blonde, $80. 714-539-0387. C

Wanted to Buy

Train Track, for American Flyer. 213-675-6325. D

Dinghy & Motor, small, separate or both, in good condition. 213-327-4356. D

Refrigerator, in good condition, w/lge. freezer compartment, up to $50. 714-548-0308. D

Drafting Machine. 213-373-3128. D

File Cabinet, 2 or 4-drwr. 213-326-7528. D

Gun, 357 cal. Ruger Blackhawk, reasonable. 213-323-4257. D

Cabin Cruiser, 4-berth, fiberglass, w/trailer. 213-378-5494. D

Sewing Machine, Pfaff 130 or 230 model. 213-328-6274. D

Trailer Hitch for station wagon. 213-378-4959.

Outboard Motors, 3 30 to 40 h.p., long shaft models desired but not mandatory. 213-644-3424. D

Ceramic Kiln, 24" to 36" & ceramic wheel, good condition. 714-897-8447. D

Belt Vibrator, ¼ h.p. hvy. duty preferred. 213-788-8293. D

Free (To Be Given Away)

Dog, AKC, wire-hair fox terrier, female, 3½ yrs. old, to mature couple w/no children or pets. 213-783-0518. F

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Moorpark & Thousand Oaks, Newbury Park. D. R. Licata, Mariposa ext. 4086, 805-498-1235.

Free (To Be Given Away)

Dog, German shepherd, male, 5 yrs. old. 213-378-2965. F

Pup, German shepherd & husky, 8 wks. old, w/frosted black. 213-337-6004. F

Rentals Offered

Apt, 3-bdrm., patio, utils. pd., 4 blocks to Northrop, $210 mo. 213-833-2512. G

Cabin, Big Bear Lake, sleeps 9, $25 w/end. 213-867-0662. G

Apt, 1-bdrm., furn., $90. 213-679-2121. G

House, 2-bdrm., newly decorated, water & trash pd., cpts., dps., fenced yd., no pets, avail. Dec. 1, $140 mo. 213-675-5493. G

Exec. Condominium, 4-bdrm., 3 baths, dps., cpts., bltins, pool & rec. facilities, $325 mo. 213-325-5609. G

Cabins, Idyllwild, 1 & 2 bdrms., f/place, stream, patios, $20-$35 w/ends; $45-$75 wk. 213-754-5288. G

Child Care

Child Care offered, my home, weekdays, under 1 year preferred. 213-644-8560. I

Child Care offered, my home, fenced yd., licensed. 213-676-3846. I

Personals

My sincere thanks & gratitude to my many friends at Northrop for their kindness throughout the years & on my retirement. CARL G. FULLER. L

Anyone from Hawthorne High School class of 1959 call 213-376-7864 regarding 10-year reunion dance. L

For Sale or Trade

Lot, 80x165, facilities in, $8,000 or trade for comparable land. 213-324-8891. M

Camp Stove, Coleman, 2-burner, gasoline, $7 or trade for CO2 pellet or BB pistol. 213-679-1631. M

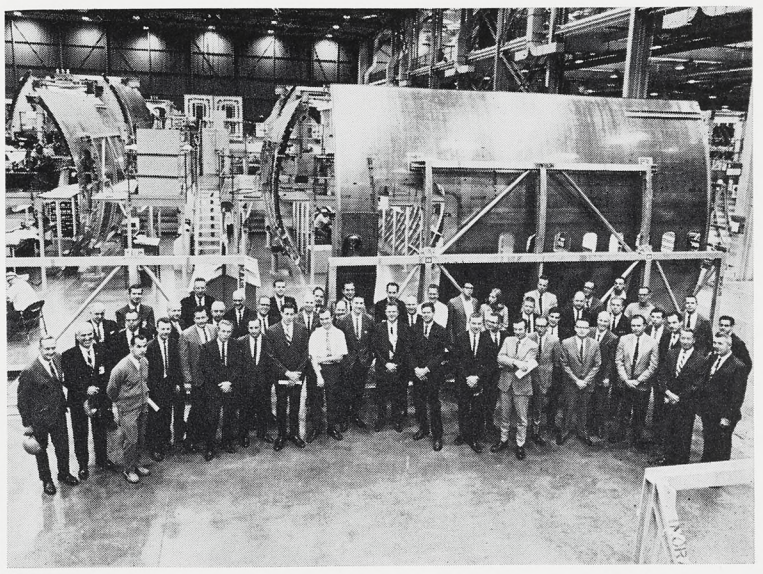
Colonel Williams Commended for Logistics Work

Lt. Colonel Richard E. Williams, USAF, has been awarded an Oak Leaf Cluster to the Air Force Commendation Medal for meritorious service involving the Northrop-built F-5 tactical fighter.

The citation accompanying the medal noted Colonel Williams' outstanding performance in planning, programming and handling logistics for allied nations equipped with the F-5.

Colonel Williams was a member of the "Skoshi Tiger" F-5 evaluation team in Vietnam and later flew with the 10th Fighter Commando Squadron of the USAF. He later served as the F-5 system manager for the System Support Management Division at the San Antonio Air Materiel Command.

IS IT NEWS?
Ext. 4273
HAWTHORNE



ON TOUR of Norair's Plant Three assembly area for Boeing 747 jetliner components are members of the Los Angeles Chapter, American Society for Metals. Approximately 60 members made the tour. Northrop has about 44 employees who are members of the Los Angeles Chapter.

Anaheim Cagers Strive for Position in City's League

The Northrop Nortronics Anaheim basketball team is in full practice swing, according to Don Ross, NRC basketball commissioner.

Eleven players turned out for the first four practice games. In addition to Mr. Ross, who is also player-coach, they are: Duane Baptiste, Al Garreffa, Bob Lawther, Jim McFerson, Larry Nielson, Lynn Pearce, Gary Smith, Bill Clewett, Mike Larsen, and Wally Harrill.

The team has been practicing at Savannah High School through arrangements made by the Anaheim Recreation Department. In December, the Anaheim cagers will participate in three games arranged by the department to determine their position in the Anaheim City Leagues. League competition will begin the first week in January.

"The team looked good in our first practice sessions," Mr. Ross said. "If we keep up this pace, we'll have a good season."

He emphasized that although there has been a good turnout, he hopes to see others join the team. For information call Don Ross at Anaheim, ext. 431.

Hoopsters Off To Fast Start At Hawthorne

Basketball season for Northrop cagers in the Hawthorne area hopped off to a fast start this month with initial organizational meetings followed by team practice sessions.

The annual pre-season NRC tournament is now being planned and will take place prior to the Christmas holiday period.

From this tournament, teams will be selected to compete in three leagues. League "A" will be made up of experienced players and teams. League "B" of players who prefer a slower game; and League "C" of competitors who prefer four-man, short or cross-court action.

FASHION SHOW staged by Nortronics Anaheim ladies was an informative and decorative affair. For example, Beth Harris (left), shows off the latest in boots and dresses, while Donna

Fish portrays a fetching bride escorted by her "father" alias Randy Lee. Mr. Lee was lone male in the show that featured 18 Northrop girls as models.

FASHION SHOW FEATURES

Eighteen Fair Ladies And A 'Prop'

Eighteen ladies from Nortronics Anaheim — aided by one gentleman "prop" — modeled at the Annual Nortronigals Fashion Show held recently at the Los Coyotes Country Club, according to Donna Robison, Club president.

Ladies participating were Joyce Mason, Beth Harris, Nancy Vroman, Judy Ann Huerth, Mildred Williams, Eleanor Scarsdale, Rita Guzinski, Grace Shaw, Billie Carlson, Katherine Capon, Terri Vining, Lisa Munoz, Ral Girous, Dotty Davis, Flo Wenrich, Coral Hackett, Shirley Lewis, and Donna Fish.

Also lending a hand was one gentleman — Randy Lee, chairman of the Nortronics Anaheim Special Events Committee, who portrayed the father of the bride to Donna Fish who modeled a white satin wedding gown.

"I was just a prop," was the way Randy explained his part.

Fashions shown were provided by various Orange County stores. They ranged from lingerie and sports clothes to the bridal outfit.

A crowd of 150 viewed the fashion parade.

STRAIGHT SHOOTING won trophies for these members of the Anaheim Production area second shift Eight-Ball Billiards League. Front, left to right, Wayne Anderson, second place winner with partner John Anthes not shown; Buck Satterwhite and Dave Millar, first place; rear, Tom Snook and Ray McKinley, first place; Bob Moore and Ed Hardman, second. The league was arranged by Chuck Beezley, commissioner, NRC Billiards Club.

Competition Keen Among NRC Golfers

Jim Johnson, Dick Outcault, Jim Randazzo, Al Collins and Dick Coffeey took first flight honors in the Hawthorne Nortronics NRC golf tournament at San Clemente, October 27. Their nets were 69, 71, 72, 72, 72, according to Dave Krieghoff, NRC golf commissioner.

Second flight winners were Ed Kong, Chuck Chamberlain, and Russ Kirby who all tied for first with a 72 net each.

Taking third flight honors were Cliff Getz, Ray Flynn, and Burt Diamond with 72, 74, and 76, respectively.

The fourth flight included Joe Kubas, 69; Dick Teel, 72; Bob Walsh, Larry Laurinat and Bill Morland, all with 74 net.

The best game net went to Dick Wood with 69. Trophy winners were Norm Henry, Bill Phillips, Mark Reid and Nils Johnson. Bob Marsh was tournament captain.

Night Owls Invite 'Day People' to Bowl

Keglers who can't get enough of their sport, days and evenings, are invited to drop around at 1 a.m. and bowl a few lines with the Anaheim Night Owls.

The early morning bowlers now have 24 members and eight teams, according to Don Hall. They meet at Carter Bowl after close of work on the second shift.

"We often need substitute bowlers," Mr. Hall said. "Anyone —day or night shift—who is enthusiastic enough to come out at 1 a.m. is welcome to bowl with us."

Outcault, Peirce Tops in Twilight Golf Activities

Dick Outcault and Rollie Peirce are the grand champions of NRC Twilight golf activities in the Hawthorne area following their victory in the annual playoff tournament.

Mr. Outcault and Mr. Peirce posted a net 142 team score in this event to finish ahead of Bill Kron and R. H. Wilson with a net 144 and Don Casson and Tak Kawashima with a net 146, the second and third-place teams.

Individual honors went to Dick Bartholomew in the low gross class, Carl Saldin in the putting contest and Bob Sheetz in the closest to the pin competition.

Some 350 golfers took part in Twilight action this year. First and second round team champions from each league competed in the championship tournament at Valencia Golf Course.

Trophies and individual league honors will be presented Friday at NRC's third annual golf banquet set for the Alondra Club, Lawndale.

NRC Completes Plans for Two Big Christmas Parties

A volunteer task force from sponsoring Northrop Recreation Clubs serving Norair, the Corporate office, and Nortronics Hawthorne and Palos Verdes is dispatching reservations this weekend for the 28th Annual Northrop Christmas Party for children of Northrop employees.

At the same time, representatives of the Nortronics Anaheim NRC Special Events Committee completed plans for the separate Christmas party it will sponsor.

The reservation packet mailed to Norair, Corporate and Nortronics Hawthorne, Palos Verdes employees who returned the special reservation requests contain admission, parking and gift tickets for the children.

The big Christmas extravaganza is scheduled for December 8 at the Shrine Auditorium, Los Angeles. Identical programs will be presented at 10 a.m., 1 and 4 pm. in order to accommodate expected crowds. Reservations specify the show families will attend.

Entertainment will include film cartoons, the Hardy Family acrobatic act, the Wheelers Marimba Trio and Santa Claus.

The "big fun program" planned by Nortronics Anaheim a week later, December 15 from noon to 4 p.m. at the NRC Clubhouse, Fullerton, will also include Santa with gifts for all children twelve and under.

"In addition there will be pony rides, a merry-go-round, candy canes and refreshments," according to Harry Belcher, Industrial Relations representative to the NRC.

Reservation cards for the Anaheim party must be returned to Personnel Activities by December 2.

ELECTIONS

(Continued from page 1)

Vaughn Peak as president. Others elected were Marv Wiebe, vice president; Donna Robison, secretary; Gaylord Miller, treasurer; Don Taylor, sergeant-at-arms.

DOUGLAS—Ricketts Named Northrop Carolina President

(Continued from page 1)

stronger as a result of his efforts. I share with all Northrop employees the highest and warmest regard for Mr. Nolan and I will miss his strong support."

Mr. Nolan became senior vice president in May 1965 after having been named Corporate vice president, Manufacturing and Administration in 1964. Before moving to Corporate headquarters, he was Corporate vice president and general manager of the Norair Division for six years during which time the T-38 and F-5 airplane programs were brought to full production.

Mr. Nolan was responsible for establishing the company's original facility in Anaheim in 1951.

Mr. Douglas joined Northrop in 1953 as assistant chief project engineer. He progressed to assistant chief engineer and to assistant general manager, Norair Division, and became vice president of Engineering at the Norair Division in 1957. In 1961 he was elevated to the office of Corporate vice president and general manager of the Ventura Division.

At Ventura, Mr. Douglas was instrumental in identifying new product areas and in moving the division into new, long-lived programs that have contributed to the present growth of the division. He was appointed president of Northrop Carolina in June 1967.

Mr. Ricketts joined Northrop in 1951 as a staff assistant. He progressively advanced to plant engineer, factory manager, director of Materiel, director of Operations and, in 1965, deputy manager of the Anaheim department. In his 17 years at Nortronics Anaheim he has had a prominent role in developing the Anaheim department's outstanding record for high quantity, diversified production.

NORTHROP NEWS

NORTHROP EDITION

Published biweekly by Northrop Corporation, Beverly Hills, California Vol. 26, No. 24 December 4, 1968

ON THE BRIDGE—Captain P. N. Fielding, master of the container ship Manchester Challenge, uses Nortronics-developed Omega system on bridge of his new command. Omega was in initial use on commercial ship on vessel's first transatlantic voyage. Photo by Marconi International Marine, Ltd.

British Skipper Praises Omega's Performance

The first Northrop Omega 1 navigation system receiver to be installed in a merchant ship has made its initial transatlantic voyage aboard the British-built Manchester Challenge of the Manchester Liners, Ltd.

The ship, also making its maiden voyage, sailed from Manchester, England, on November 5 and arrived in Montreal, Canada, on November 12.

Marconi International Marine Company, which installed the Omega receiver on the merchant vessel, said Omega 1 provided the vessel with a simple and reliable device to determine its position at any time to an absolute accuracy of better than two miles.

Transmitting stations, operating on 10.2 kHz, provided complete hyperbolic coverage of the North Atlantic trade route over which the new vessel sailed.

"Three lines of position were automatically displayed on the receiver," a Marconi spokesman said. "This enables the ship's navigator to fix a position in about a minute."

Sy Shenkman, Omega field representative for Product Support, and Denny Bates, Marketing, Navigation department, Hawthorne, were in the group that welcomed the ship into port at Montreal.

Mr. Shenkman was also in Manchester for the departure and made a complete check of the Omega system before the ship sailed.

After the voyage, Captain P. N. Fielding, master of the ship, said, "Omega was very efficient, as accurate as it claimed to be, and very nice to have aboard."

(See OMEGA, page 2)

Hallicrafters Discount Offer Still Available

Northrop personnel interested in taking advantage of pre-Christmas discount rates on Hallicrafters radios, amateur, shortwave and communication equipment are being reminded of one aspect of this offer.

Approximately 10-14 days are required for processing and shipping orders after receipt of the order at Hallicrafters' plant in Illinois. Thus, Christmas orders must be placed soon.

The Northrop subsidiary offers savings of up to 35 per cent over regular employee rates and as much as 60 per cent off list prices during this sale, which ends December 24.

Information and order blanks may be obtained from any Northrop Personnel Activities outlet.

NASA Sends 'Well Done' For Apollo 7

Congratulations still are being received at Northrop for contributions made toward the recently successful Apollo 7 mission.

Most recent of these has come from the National Aeronautics and Space Administration in Washington, D.C.

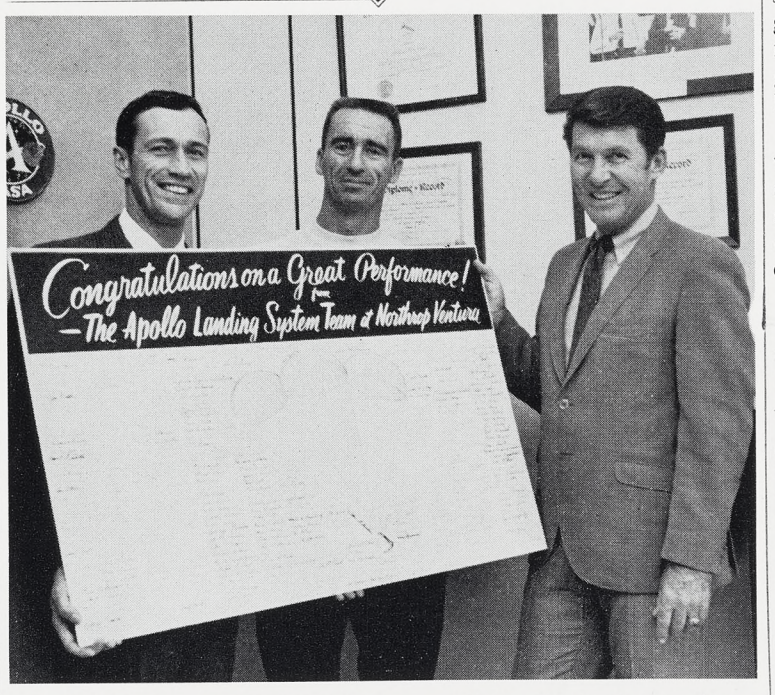
In a letter from T. O. Paine, acting administrator at NASA, to Thomas V. Jones, president, the administration has expressed to Northrop, a major Apollo prime contractor, "NASA's deep appreciation for a job well done."

In his congratulatory message, Mr. Paine told Mr. Jones that Northrop has "helped write a proud new chapter in our country's space flight history, which has been favorably recognized throughout the world.

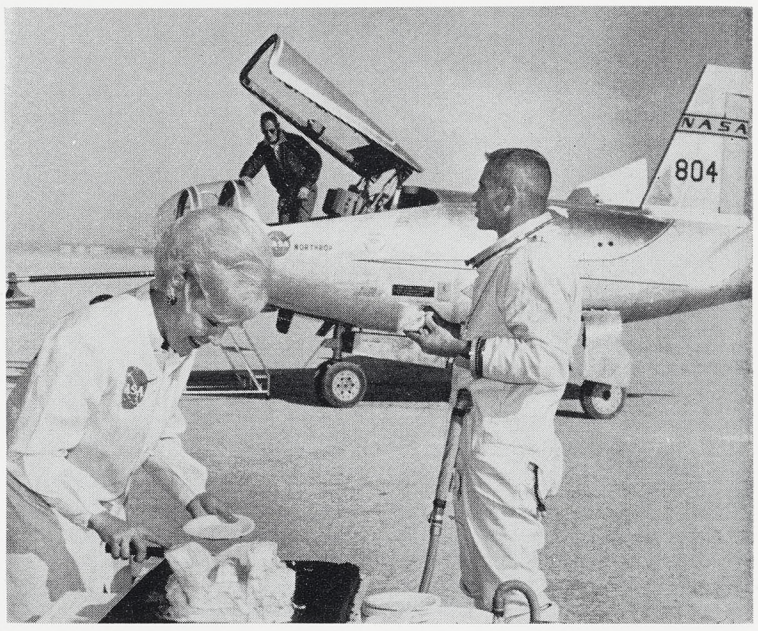
"We look forward confidently," said Mr. Paine, "to continuing steady progress toward our nation's lunar landing goal. I know we can count on you and your associates for that essential bit of extra effort required now to make these final critical missions as successful as Apollo 7."

In his response, Mr. Jones told Mr. Paine that "we are exceedingly proud to be a member of your team and to have been a part of this historic achievement." Mr. Jones emphasized that the employees at Northrop "fully recognize our responsibilities in connection with the final phases of our manned lunar landing program.

"I pledge to you," he said, "that all of our efforts will be devoted to insuring that each future mission is a complete success."



APOLLO 7 ASTRONAUTS Donn Eisele, Walt Cunningham and Wally Schirra took a moment in space to ask for cards and letters. The response from the Apollo Earth Landing System team at Northrop Ventura was this giant postcard, autographed by those who built the system that carried the crew to a safe splashdown. They received it in the astronaut office upon arrival back at the NASA Manned Spacecraft Center in Houston, Texas.



DOUBLE CELEBRATION — John A. Manke, NASA civilian research pilot, celebrates his 37th birthday with a slice from an HL-10-shaped cake following successful completion of first sustained rocket-powered flight of the Northrop-built HL-10 lifting body. Northrop's Sharna Higgins cuts more cake. NASA photo.

Northrop-built Lifting Body Makes Rocket-power Flight

The National Aeronautics and Space Administration's (NASA) HL-10 lifting body, designed and built by Northrop Norair, has successfully completed its first sustained rocket powered flight.

John A. Manke, a civilian research pilot for NASA's Flight Research Center, was at the controls.

The November 13 flight lasted five minutes and saw the stubby, wingless HL-10 reach a top speed of 610 miles per hour and an altitude of over eight miles high.

The HL-10 was launched from the wing of a B-52 flying near Rosamond, west of NASA Edwards. Following launch, Mr. Manke ignited two of the four chambers in the HL-10's rocket engine. He reached an altitude of 43,250 feet approximately 184 seconds later when the rocket engine shut down as programmed from fuel exhaustion. He then glided to a landing on Rogers Dry Lake bed.

The HL-10 is one of several wingless craft that are under study for possible use as manned spacecraft of the future, capable of landing like a conventional aircraft.

The successful sustained rocket powered flight of the HL-10 was the 13th flight for the HL-10. Eleven of those flights were unpowered flights in which the HL-10 was glided to a powerless landing from 45,000 feet altitude. On October 23 the HL-10 encountered ignition problems that resulted in an early shutdown of the rocket engine, with the lifting body carrying out a normal landing.

NASA has announced plans to gradually increase, in small increments, the performance of the HL-10. Eventually speeds in excess of 1,000 mph and altitudes of up to 80,000 feet are expected. This increased performance will be used to simulate an actual lifting body type spacecraft during the terminal portion of flight in its return to earth from outer space.

JONES TO ADDRESS MANAGEMENT CLUB

Thomas V. Jones, president, Northrop Corporation, will be the speaker at the December 13 dinner meeting of the Norair Management Club, Ralph Branning, club president, has announced.

Mr. Jones will discuss the current progress of the company and the long range projections for Northrop's continued growth.

The dinner meeting is set for 6 p.m. at the Airport Marina Hotel, Lincoln at Manchester.

USS Coontz Given Plaque By Northrop

Officers and crew of the destroyer USS Coontz received a plaque expressing the appreciation of Northrop Nortronics for outstanding performance during the first shipboard use of TEAMS.

TEAMS is the Test Evaluation and Monitoring Systems developed by Northrop Nortronics at Anaheim.

Making the presentation to Commander E. D. Geiger in a ceremony in San Diego were Jim Norman, chief, Applications Engineering group; M. B. Sawyer, TEAMS applications engineer, and Tom Barry, TEAMS program manager.

The plaque included a raised photograph of the USS Coontz and a legend expressing appreciation for the crew's "assistance with the installation and their enthusiastic support during operational evaluation."

It added that this contributed

(See COONTZ, page 2)

See Page 3 for Photographic Highlights of Family Day

TV Tape Systems Open New Horizons In Northrop Technology Communication

A videotape recording and closed circuit television "network" has come to Northrop.

With the recent delivery of 10 videotape TV systems to East and West Coast facilities, Northrop now has the capability of exchanging technical information by means of magnetically recorded television tape.

SERVING MANY

The systems acquired by Northrop Corporate Laboratories will be utilized in the east by the technical departments of Hallicrafters, Page Communications Engineers, Nortronics Precision Products Department, Northrop Carolina and Nortronics Huntsville and on the west coast by Norair, Northrop Ventura and Nortronics Hawthorne, Palos Verdes and Anaheim.

Each of the 10 "satellite" systems consists of: (1) a table-top Ampex videotape recorder which records or plays back picture and sound simultaneously on a one-inch band of Mylar base tape, (2) a viewfinder television camera mounted on a tripod which photographs the subject, feeding this image to the recorder for storage on tape, and (3) a 21-inch TV monitor for viewing or playback.

PARENT STUDIO

A parent studio, with more sophisticated equipment than the "satellite" stations, including a tape duplicating capability, is in operation at the Corporate Laboratories facility in Hawthorne.

An important function of the equipment will be to tape record a conference or meeting at one location and later play back the event for viewing at another. By simply mailing tapes between the TV-equipped facilities, Northrop technological ideas, laboratory developments and problems can be exchanged without having all participants gather at one location.

One of the first uses the 10 stations will make of their newly acquired tool will be to contribute individual presentations covering their facilities, operations and programs to a pool of pre-taped material for distribution within the corporation.

NOVEL LECTURN

A unique and flexible piece of equipment at the NCL installation is an electronic lecturn with a builtin TV camera and two built-in eight-inch preview monitors. It has the capability of projecting live camera pictures either of the speaker or of slides and graphic material on two large room monitors while videotapes are made.

Both the TV camera mounted in the projection booth and the one built into the lecturn are equipped with 10-to-1 zoom lenses. Other equipment in the booth provides for superimposing one camera's picture over another and fading out of either picture.

These techniques may be employed in the recording of presentations, panels, conferences and seminars directly from the line output in the conference room onto tape. Spools hold one hour of recorded material. The system delivers near broadcast quality in resolution, and an audio and video presence almost equal to that of commercial TV station equipment.

VERSATILITY

Each station will be able to record material broadcast on commercial TV directly from receivers, if necessary. Additionally, and important in the distribution of tapes throughout the network, the NCL parent installation has the capability of dubbing first generation copies of the master tapes. This means that technological material recorded in Hawthorne this morning could be seen by the west coast stations within two days and by all 10 stations two days later.

OTHER USES

The systems have an infinite number of uses beyond the technological exchange of information, such as presentation rehearsal, training, monitoring of tests and dissemination of product support information, to mention only a few.

SPECIAL EDITION

Because of the long Thanksgiving weekend, this single edition of the Northrop News is being distributed to all divisions.

CLOSED CIRCUIT TELEVISION, by means of videotape, is operated at Northrop Ventura by engineer Rodger Sorenson (left), and Tom Smalley, Ventura cinematographer. Dr. Robert Johnson (right), chief of Research at Northrop Ventura, illustrates how a speaker may utilize the new tool for exchange of technical information. Each system in operation at Northrop consists of the record/playback unit (foreground), miniature TV camera, and a 21-inch monitor. Note Dr. Johnson's image displayed on monitor in background.

JOHN OLIVER (left), Corporate Product Licensing administrator, and Stan Peterson (right), help Mr. Whitaker with license agreement.

Whitaker Will Manufacture Product He Originated

A former Nortronics Anaheim man has received a license from Northrop to manufacture a product from an idea he submitted to the company under the Northrop Patent Award Plan six years ago.

He is Noble D. Whitaker, who now heads his own company, Process Engineering Products and Services in Los Alamitos. He has been granted a license by the Corporate Product Licensing Administration to manufacture and market an emulsified solvent used to clean printed circuit boards.

The idea for the solvent was included in a number of ideas Mr. Whitaker submitted to Northrop when he worked at Anaheim in the Process Engineering section.

In addition to taking a license under his own idea, he has obtained licenses to manufacture two other Northrop products. They are the PE-12 adhesive, a two-part glue said to be one of the finest made, and Norcote, a finish coating for printed circuit boards.

Stan Peterson of Northrop Product Licensing, points out that under the Northrop Patent Award Plan employees who submit patentable and marketable inventions may share in any royalty income received by the company for licenses granted to others under the patents.

"We are interested in all types of ideas," he said. "Every idea and invention disclosure will be carefully evaluated. There is no telling what may or may not be of value. Let us hear from you."

COONTZ

(Continued from page 1)

significantly to the advancement of this Navy on-line monitoring and fault-finding system. "Northrop Nortronics hereby expresses appreciation to the commanding officer, Commander E. D. Geiger, his officers and men," the citation concluded.

TEAMS was specifically designed to be compatible with existing shipboard radars. "However," Mr. Barry pointed out, "our TEAMS equipment is capable of being utilized aboard many classes of ships as well as with other prime equipment such as sonar, communications, propulsion, and countermeasure systems."

Installation of the TEAMS equipment on the USS Coontz began April 9 with initial turn-on effected on May 6. A majority of the operation evaluation tests were completed on October 28. Additional tests are scheduled on the USS Coontz through January 1969.

USS COONTZ skipper, Commander E. D. Geiger, receives plaque from Jim Norman (left) and Tom Barry (right) for outstanding performance of the USS Coontz first shipboard use of TEAMS.

FINAL MEETING SET FOR HAWAIIAN TOUR

Northrop travelers taking part in the annual NRC Hawaiian tour will meet at 8 p.m. Friday at Dandel's Restaurant, 12000 Western Avenue.

Instructions and information pertinent to the trip will be given. Two tours are planned, one departing December 25, the other December 21.

OMEGA—First Transatlantic Crossing a Dual Maiden Voyage

(Continued from page 1)

Captain Fielding added that, as planned, the Omega receiver will undergo further evaluation aboard the Manchester Challenge during the next three months.

Omega is a new worldwide radio navigation system, developed by the U.S. Navy. Northrop produces a shipboard receiver for the Navy and is developing an airborne receiver for the same agency. The company also developed the version used by the Manchester Challenge for use by commercial ships.

Northrop Nortronics and Marconi International Marine are working together to demonstrate and distribute the low-cost commercial receiver, according to H. W. Turney, Northrop program manager for Omega.

Omega navigation makes it possible for shipowners to realize significant savings in operating costs through reduced time at sea, more accurate course determination, and improved ability to predict arrival times in port.

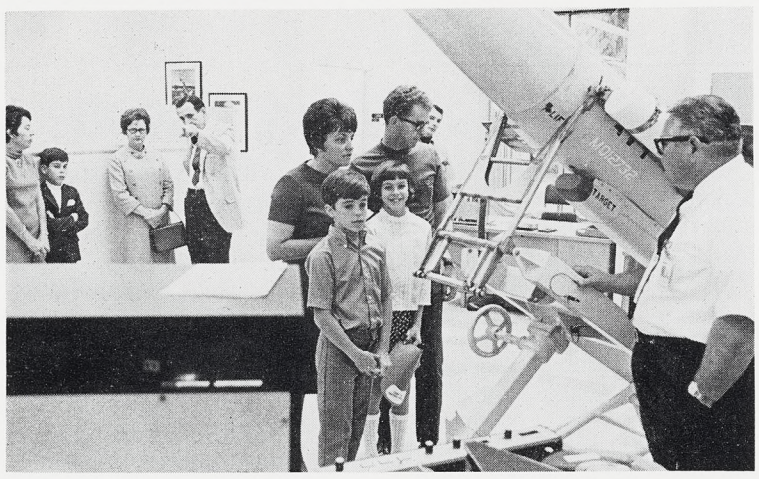
DEADLINE SET FOR HOLIDAY KEG EVENT

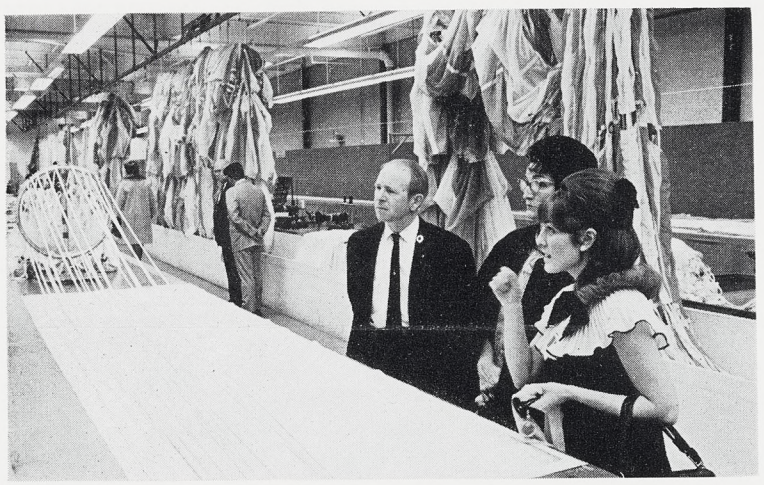
Deadline for entering Northrop Corporation's 15th annual Christmas bowling tournament is Friday. Entry forms are now available at all Northrop Personnel Activities outlets.

The tournament will be held December 28-29 at Tropicana Lanes, Inglewood. Events include men's and women's singles and doubles and all-events.

Bowling schedules will be available December 18 throughout Northrop facilities.

Northrop Ventura Family Day Entertains 3,600 Visitors





Comprehensive View Of All Operations Afforded Each Guest

Three thousand six hundred employees, families, friends and guests of Northrop Ventura came to Family Day.

And before the last few had gone, well after the announced closing time, they had seen product displays and exhibits, witnessed demonstrations and simulated testing, and generally had gotten a comprehensive view of what Northrop Ventura is all about. And they had fun doing it.

That was the purpose of the day. Johnnie Via, Family Day coordinator, called it "an unqualified success.

"It was well worth all the effort that our people exerted to make it the success it was," said Mr. Via. "And we had tremendous cooperation from everyone involved."

Present during the day to welcome employees and guests were Welko Gasich, vice president and Ventura general manager; H. E. Riggins, vice president and assistant general manager; George Grogan, vice president of Engineering; and M. A. Maurer, vice president and manager of Production Operations, as well as other Northrop Ventura executives.

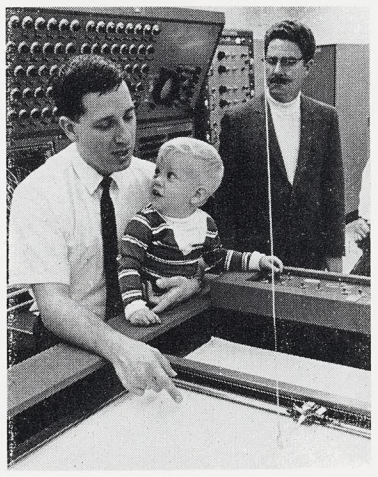
A highlight of the afternoon, and certainly one of the most popular features, was the colored film and slide presentations of Ventura production lines, the MQM, Apollo and Parawing test drops and the 747 rollout. Mr. Gasich had taped the narration of the program which played on the hour to standing room only crowds in the assembly room. An extra showing was added just before closing to insure that no one would be turned away. The NVRC was well represented with interesting exhibits which drew many to the cafeteria.

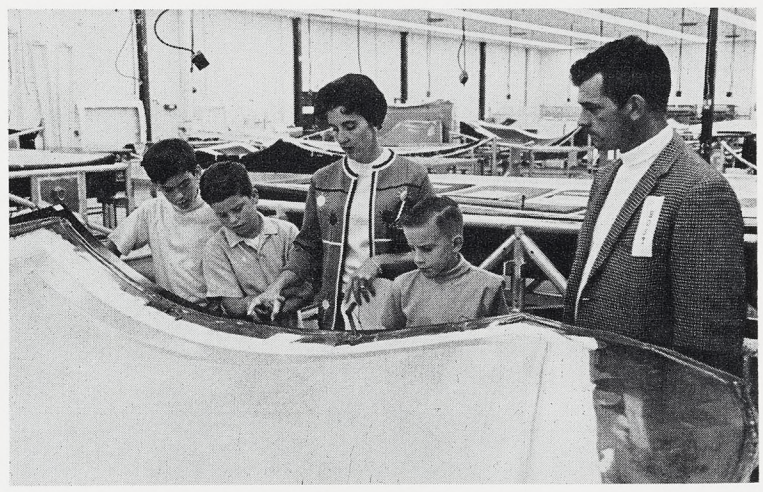
The photos on this page are random samplings of those who came and saw.

The thousands that came enjoyed 4,440 cookies, 3,100 cups of punch and almost as much coffee, 2,000 ice cream bars and 508 cartons of milk, according to Bob Wilson, cafeteria manager.

Souvenirs of the day included key chains and hats.

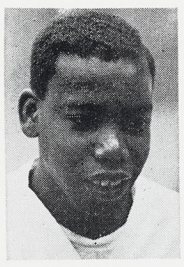
PHOTOS BY BOB THORNTON





WHAT DO YOU THINK?

What Do You Want for Christmas



Mr. Cade

Donald Cade, Metal Spray area, Ventura:

Since I just got back from Vietnam, my wife and I are busy getting our home and furniture and we'd like to have that for Christmas. I think our chances are pretty good of having it by then. And then, by next Christmas, we'll be anxious for our first child.

Mrs. Larson

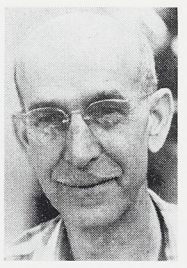
Donna Larson, Security office, Norair:

I have an 18-month old daughter who is just learning to talk and since my husband and I are going to visit our parents for Christmas, I'd love for Michelle to be able to say "grandma" and "grandpa." The way she's progressing, we may make it.

Mrs. Garrett

Buelah Garrett, Accounts Receivable, Nortronics Anaheim:

What I'd really like Santa Claus to put in my Christmas stocking is an airline ticket back to my home in Kansas. But since I don't think he can come through with two others for the rest of the family, I'll have to settle for whatever he'll bring.



Mr. Kleidosty

Tony Kleidosty, Sheet Metal, Ventura:

I'd say the thing I want most is to have peace and to have the Vietnam war settled by then. I have some second cousins fighting there and I'd like to see them come home. There just might be a chance. Also, I would wish for continued good health as a present, especially since I'll retire in about a year.

Mr. Wissler

Leonard Wissler, Model shop, Norair:

What I'd really like to have is some stereo equipment, but my wife wants a dishwasher first. So, maybe if I agree to wash the dinner dishes my chances of getting that stereo would be improved.

Miss Monioz

Michele Monioz, receptionist, Nortronics Palos Verdes:

I wish that Santa would bring happiness and joy to everyone and that all families can be together to enjoy the best holiday season of the year.

Fred Bailey Brings Back New England on Canvas

Fred Bailey liked New England so well on a recent vacation that he brought it back with him in a dozen water color paintings and numerous sketches.

He recently shared his enthusiasm for the picturesque beauty of Cape Ann and Rockport Harbor with his fellow workers at Nortronics Anaheim through a one-man show in the lobby of the administration building.

Mr. Bailey was so impressed by his summer visit that he flew back to make additional sketches in the winter. Besides the 12 paintings displayed in the show, he is working on others from color and pencil sketches made during the two trips.

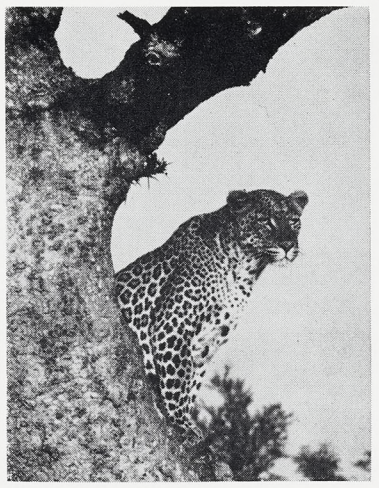
During the show, he found that he is not alone in his admiration of the New England scene. He sold half the displayed paintings.

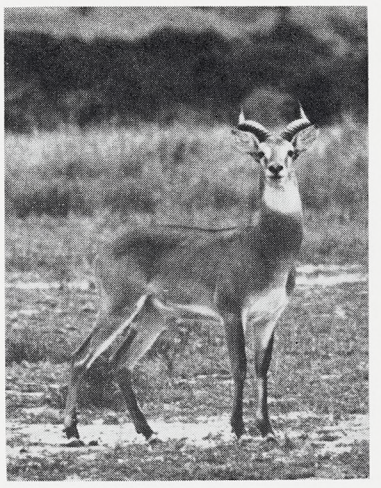
Mr. Bailey has been in Graphic Arts for 18 years. He came to Northrop in 1952 to help organize the Graphic Arts department at Anaheim. He then joined the Information Systems group to devote himself full time to industrial design, working on advanced design concepts and engineering systems. He has a bachelor's degree in industrial designing from Woodbury College.

TV PREVIEWS

Northrop personnel may obtain free tickets to attend private screenings of new network television shows at the Preview House, Hollywood, through arrangements just completed by NRC.

Contact Personnel Activities outlets for details.





CAMERA ARTISTS—Lee and Anita Johnson snapped well over 1,000 pictures on their 32-day camera safari that took them to Kenya, Uganda and Tanzania. Among their favorite shots, and animals, are (from left) a leopard they snapped in sequence as he stalked game, a stately Uganda Kob, and a lazy-looking lion. Minibus made it possible to get within a few feet of animals.

JOHNSONS DISCOVER

East Africa Is a Land of Many Faces

"It was like a zoo in reverse—the people enclosed, the animals free . . .

"The land was incredibly beautiful and varied — plains, mountains, forests, rivers and lakes, arid areas. Trees and plants are remarkably colorful, so different. The people add more color, in their dress, habits, temperament. The food is good, very plentiful. Housing was first-class . . .

"The sight of so many species of animals and birds living together staggers the imagination . . .

"We were sad to learn much of what we saw may become extinct, perhaps within our lifetime . . ."

Lee and Anita Johnson voiced these comments on returning from a 32-day safari to East Africa.

Mr. Johnson is Norair's chief Safety engineer; Mrs. Johnson a former Nortronics librarian.

They toured Kenya, Uganda, Tanzania in East Africa with a safari staged by the Greater Los Angeles Zoo Association.

All participating were armed with cameras, not guns. Their trophies were photographs, more than 1,000 for the Johnsons alone, of animals in their natural habitat.

Six individuals were assigned to a specially-outfitted minibus capable of traversing various types of terrain. The roof slid back to provide a special camera platform.

"It amazed us to see animals had no fear of the vehicles. We were able to drive into their midst at will," Mr. Johnson said.

The safari route led to all major national parks and game reserves in the nations they visited, plus other key sights and points.

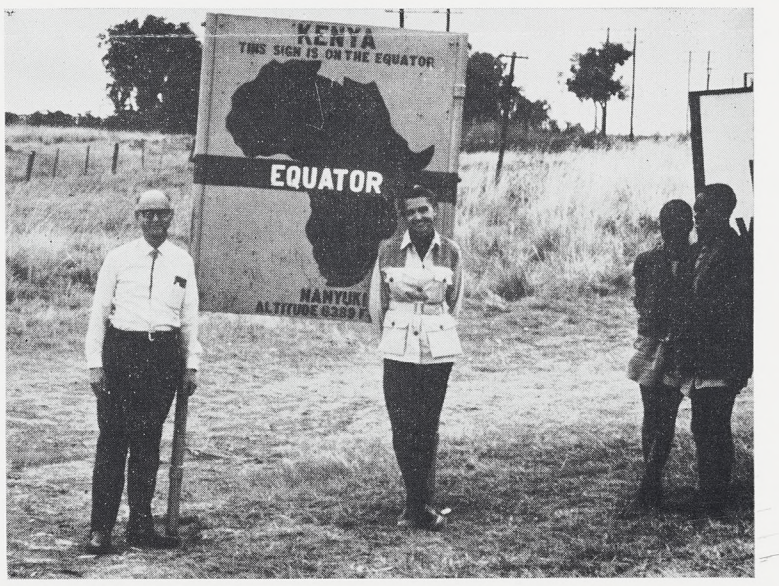
Guiding the Johnson's segment of the total party was Colonel Mervyn Cowie, author, parliamentarian, lifetime resident of Africa and founder of many national parks and conservation groups. Of special interest was the opportunity to visit native homes and the home of Colonel Cowie and his father before him, a historic landmark.

An overnight stay in the Treetops was a special highlight. It is a hotel built in the tops of trees and accessible only with an armed guide during daylight hours. At night floodlights from the Treetop bring nocturnal animal life within camera range.

It was Colonel Cowie who informed the Johnsons of the rapidly diminishing animal life, despite game laws and special restrictions on hunting. Poachers, plus expanding farms and populated areas, threaten their very existence, he said.

The Johnsons were so impressed with the conservation need that they became members of the South African Wild Life Society, an organization dedicated to conservation of animals and their natural habitats.

"We will never forget what we saw," Mr. Johnson said. "Our wish now is that much of this will be preserved for the benefit of future generations."



MIDDLE OF THE WORLD—Lee and Anita Johnson pose, with some friends, at a point in Kenya marking the exact location of the equator. Their trip, a 32-day camera safari, gave them a rare insight into a beautiful and rapidly growing area.

FRED BAILEY AND HIS ART

Football Causes 'Feud' Between Anaheim Friends

In the Nortronics Anaheim Security office Buck Pennington and Jerry Sizelove get along great—until football is mentioned. Then friendship loses out to fatherhood.

Sons of both men are gridiron rivals, playing on opposing teams in the California Interscholastic Federation (CIF) playoffs. Steve Pennington, 16-year-old junior and class president, plays halfback for La Quinta. Mark Sizelove, also 16, is a junior at Laguna High.

Both teams were champions in their leagues and met for championship playoffs.

At the game Laguna won with a score of 14 to 13.

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Comet, 1961, auto. trans., r/h, $400. 213-370-7092. A

Corvette, 1962, 4-spd., 327, 2 4-bbls., $1,400. 213-323-7507. A

Chevrolet, 1965 S.S. Impala, 2-dr. h/top, p/b, p/s, auto. trans., a/c, $1,695. 213-326-1856. A

Station Wagon, 1962 Chev. II Nova, 6-cyl. auto., r/h, $650. 213-375-8536. A

Chevrolet, 1963 Nova, 2-dr. h/top, auto., $695. 213-862-3027. A

Chevrolet, 1967 Camaro, fact. air, auto., r/h, $2,395. 213-374-6841. A

Ford, 1961 Starliner, 352 V-8, auto., $280. 213-644-6733. A

T-Bird, 1965, fact. air & full power, $2,300. 213-679-0848. A

Volvo, 1961 122S, 4-dr., 4-spd. stick, $495. 213-670-4525, 213-375-8643. A

Ford, 1960 Fairlane, 2-dr., V-8, auto. trans., r/h, p/s, $250. 213-564-0584. A

Mustang, 1965, 289 V-8, 2-dr. h/top, a/c, full power, r/h, auto. trans., $1,395. 213-374-7546. A

Mustang, 1967 GT, 390 cu. in., 4-spd., full power, a/c, disc brakes, fastback, $2,450. 213-323-4257. A

Ranch Wagon, 1966 Ford, stick shift, r/h, p/s, $1,200. 213-375-5856. A

Mustang, 1965 2+2, V-8, fact. air, p/s, 4-spd., radio, $1,475. 213-541-2136. A

Buick, 1966 special, convt., V-8, auto. trans., r/h, $1,350. 213-675-0777. A

Thunderbird, 1957, h/top, portholes, all power, r/h, $1,500. 213-679-7840. A

Mustang, 1965, convt., auto., V-8 289, $1,495. 213-378-8136. A

Mustang, 1965 V-8, 289, 4-spd., r/h, $1,395. 213-428-6075. A

Austin Healey, 1960 3000, new paint & eng., custom h/top, $1,025. 213-674-1891. A

Chevrolet, 1965 Impala, 4-dr. h/top, p/s, p/b, r/h, $1,350. 213-324-5996. A

Dune Buggy, 1958 Volkswagen, w/'62 eng., $500. 213-375-4558. A

Cadillac, 1962 convt., r/h, fact. air, $1,200. 213-663-3622. A

Volkswagen, 1959, $200. 213-644-3272. A

Shelby, 1967 GT500, 428, auto., air, stereo, extras, $3,795. 213-374-5935. A

Chevelle, 1965 Malibu 2-dr. h/top, r/h, p/s, $1,700. 213-371-0323. A

Jeep, 1964 Wagoneer, 6-cyl. O.H.C., 4-whl. drive, r/h, $1,395. 714-521-0073. A

Mustang, 1965 Fastback GT, 225 h.p., 4-spd., disc brakes, $1,650. 213-641-1005. A

Dune Buggy, 1962 VW running gear, roll bar, tow bar, $900. 213-676-6893. A

Volkswagen, 1967 Suntop, AM/FM/SW radio, $1,600. 213-375-3813. A

Thunderbird, 1960, $675. 213-679-3958. A

Station Wagon, 1964 Impala, r/h, p/b, p/s, auto. trans., $1,200. 714-524-1728. A

Mustang, 1965, 289 cu. in. V-8, 4-spd. trans., extras, $1,600. 213-677-0937. A

Comet, 1965 Cyclone, V-8, 4-spd., S/W gages, $1,500. 714-529-6762. A

Model T, 1927 4-dr. sedan, needs general rehabilitation, $800. 714-526-6759. A

Ford, 1963 Galaxie, V-8, auto., 2-dr. h/top, p/s, p/b, r/h, $675. 714-633-6344. A

Ford, 1940 sedan, Deluxe, new eng., reblt. trans., $300. 213-861-8877. A

Porsche, 1967 912, 4-spd., AM/FM/SW radio, $4,500. 213-439-4600. A

Pickup, 1946 Chevrolet, 1956 eng., r/h, $300. 213-545-1676. A

Oldsmobile, 1960 98, 4-dr., r/h, fact. air, full power, $350. 213-678-2731. A

Chevrolet, 1962 Impala, 4-dr. h/top, reblt. 327 V-8, fact. air, $650. 213-791-3753. A

Pontiac, 1965 GTO, 2-dr., auto. trans., p/s, p/b, fact. air, $1,500. 213-644-7508. A

Morgan, 1957 + 4 roadster, $950. 213-325-0487. A

Volvo, 1960 P544, new paint, many extras, $595. 213-329-1705. A

Station Wagon, Ford 1958, needs eng. work, $100. 213-532-8294. A

Volkswagen, 1968, 4,000 miles, $1,650. 213-295-2400. A

Buick, 1962 Special, auto., $325. 213-839-9066. A

TR-3, 1959, new tires, clutch & brakes, $550. 213-377-2282. A

Chevrolet, 1966 Nova, 2-dr., Turbo-Hydromatic, r/h, $1,400. 213-632-1666. A

Oldsmobile, 1966 Cutlass, 2-dr. Holiday cpe., r/h, auto. trans., p/b, p/s, $1,895. 213-372-0961. A

Morgan, 1965 +4 rdstr., 6,000 mi., AM-FM radio, htr., many extras, $3,000. 213-396-3594. A

Automobiles For Sale

Mustang, 1966, radio, p/s, auto. trans., $1,650. 213-329-9464. A

Travelall, 1966 International, V-8, auto. trans., p/b, p/s, a/c, r/h, $2,475. 213-927-0282. A

Household Items For Sale

Bar Stools, 2, $18. 213-327-5376. B

China, Rosenthal, service for 12, cream white w/beige rose, $150. 213-379-6379. B

Love Seat, quilted, off-white & light green, T-cushions, $60. 213-672-4447. B

Rocker, recliner, few mos. old, $90. 213-674-8361, 213-645-8067. B

Chest-of-Drawers, antique white, $15. 213-823-1910. B

Dinette Set, 4 captain's chairs & 42" round ext. table, $50. 213-327-3795. B

Refrigerator, $50. 213-320-3844. B

Range, Kenmore, gas, 40", 4-burner & griddle, $35. 213-756-3669. B

Mirror, plate glass, 24" round, $3. 213-675-6020. B

Dining Room Set, blond, ext. table, 4 uphol. chairs, glass door china closet, $150. 213-375-1395. B

Mirror, bltin medicine chest-type w/2 side mirrors, $9. 213-327-4585. B

Dishwasher, $20. 213-671-1432. B

Sewing Machine, Pfaff Super Deluxe zigzag, mod. 188, $175. 213-378-4676. B

Couch, Early American, 8', $50. 213-421-9986. B

Youth Bed, waxed birch finish, removable side rails, incl. mattress & some bedding, $29. 213-323-8089. B

Stove, gas, Wedgewood, coppertone, 2 yrs. old, $75. 213-343-3579. B

Dryer, Sears, elec., mod. 500, 220 or 110 volt, 6 mos. old, $100. 213-834-5441. B

Stove, gas, $25. 213-644-1720. B

Range, white Gaffers & Sattler, 5½ yrs. old, full size oven, $75. 213-324-9193. B

Sideboard, antique, antique white, $40. 213-534-1399. B

Love Seat, $20. 213-676-9858. B

Stove, apt. size, $25. 213-370-1003. B

Dryer, RCA Whirlpool, $25. 213-328-1520. B

Crib, lge. size, natural wood, w/mattress, $25. 714-525-4953. B

Dryer, Speed Queen, gas, $45. 213-374-4944. B

Freezer, Penncrest, magnetic touch, upright, 250 lbs. cap., 2 yrs. old, $100. 213-328-7989. B

Refrigerator, 14 cu. ft. Norge, 5 yrs. old, $30. 213-645-6506. B

Studio Couch, Scotchguard fabric, sleeps 2, $50. 213-679-6982. B

Freezer, upright Duracrest, 350 lbs. cap., $85. 213-679-5704. B

Bed, folding-type, dble., mattress, metal frame, $35. 213-676-5929. B

Stove, apt. size, gas, $20. 213-329-5626. B

Refrigerator, Gibson, dble. dr., freezer on bottom, 1 yr. old, white, $195. 213-329-0504. B

Freezer, lge. chest type, $50. 714-523-2495. B

Washer, Maytag, $30. 213-294-7373. B

Sofa, off-white, 8' long, zippered cushions, $75. 213-671-5722. B

Serving Cart, wicker, $8. 213-376-8250. B

Desk, walnut, full size, $25. 213-835-5052. B

Miscellaneous For Sale

Heater, 1-rm., gas, vented, $10. 213-675-7403. C

TV Antenna, gold anodized w/10' mast, $20. 805-497-3101. C

Lawnmower, reel type, $5. 213-754-8092. C

Shoe Skates, ladies', size 8, $10. 213-370-3132. C

Honda, 1967, 160 Scrambler, elec. starter, $400. 213-672-0426. C

Aquarium, 20-gal., w/access. & stand, $40. 714-528-2382. C

Motorcycle, 1968 BSA, Starfire, 250 cc, take over $42 mo. pymts. or $600. 213-679-2963. C

Bicycle, girl's 20", $15. 213-833-7819. C

Rifle, 22 automatic, $25. 213-372-2313. C

Pup, poodle, silver min., AKC papers, $50 ea. 213-944-4351. C

Wheels, 5 for VW bus, w/tires & hubcaps, $50. 213-396-6739. C

Interest, ¼, in Aeronca L-3, 190 S.M.O.H., ceconite, radio & omni, $490. 213-323-9768. C

Pups, German shepherd, Rin Tin Tin color, $25-$30. 213-675-3725. C

Air Conditioner, General Electric Thin Line compressor-type, 7500 b.t.u. cap., w/steel porta-cart stand, $85. 714-528-7636. C

House, 5-rm., heated 15x35' pool, 45x150' lot, cement b/wall, cpts., dps., near Northrop, $26,500. 213-679-4778. C

Fall, light blond, 16", $45. 213-375-8722. C

Motorcycle, 1965 Honda S-90, reblt. eng., $200. 213-670-6017. C

Sailboat, 9½' Teacup, dacron sail, sand dolly, $150. 213-321-1655. C

Home, 5-bdrm., 3-car gar., central a/c, undg. util., 600 sq. ft. brick & redwd. patio, landscaped, sprinklers, fences, near Northrop Ventura, $38,500. 213-889-8075. C

Doors for VW, $5 ea. 213-370-2876. C

Pups, golden retriever, AKC reg., all shots, females, $125; males, $150. 213-377-4018. C

Stereo Console, German-made Lowe-Opta, 6 Grundig spkrs., encased in walnut cabinet, $200. 714-639-2509. C

Miscellaneous For Sale

Train Layout, H.O., 4'x8', 3 engs., 24 cars, 3 pwr. packs, $40. 213-633-6106. C

Drafting Board, w/adjust. stand, 31"x42", & full size T square, $23. 714-774-4853. C

Table, child's, folding, metal, 4 chairs, $4. 213-379-5690. C

Tape Recorder, stereo, 4-track, ext. jacks, 2 mikes w/2 tapes, $50. 213-676-4536. C

Verifax Copier, Kodak, $50. 213-377-3532. C

Guitar, Martin tenor, $125. 213-830-5926. C

Radio Transmitter, amateur-type, Heath DX 100, $60. 213-676-6949. C

Handgun, .38 Special, single action, stag grips, 7½" bbl., $50. 213-283-1828. C

Wedding Dress, satin & lace, long sleeves, 9' train, size 9-10, $45. 213-676-8833. C

Band Saw, Craftsman 12" w/stand, ½ h.p. motor, access., $75. 213-670-2564. C

Camper, for 1957-'58 Ford Ranchero, w/sun tarp, wood int., $125. 213-327-8766. C

Airplane, 1960 Cessna 172, full panel, MK 12-VHT 3 radio, TTAE 2,300 hrs., s.m.o.h. 550 hrs., $5,400. 213-670-0713. C

Piano, Wurlitzer spinet, $290. 213-676-5101. C

Boat, 16', fiberglass, Mark 78 motor & trailer, bait tank, $1,000. 213-645-3613. C

Bowling Ball, 13-lb., & bag, $15. 805-495-8515. C

Motorcycle, 1966 Bonneville Triumph, $900. 213-675-9673. C

Motorcycle, 1968 Yamaha, 350 cc, $650. 213-534-3100. C

Lot, 2½ acres, Iron Gate Lake, Calif., take over $45 mo. pymts., $4,995. 213-377-2064. C

Radio, ship-to-shore, $15. 213-324-4817. C

Apt, Anaheim, 6 units, 4 2-bdrm., 2 1-bdrm., terms, $57,000. 213-861-1529. C

Camper, full cabover, 8' bed, w/boot, $425. 213-830-4265. C

Exhaust System, Porsche, for VW 1500, w/chrome tip, complete, $30. 213-674-8997. C

Motorcycle, 1968 Honda, 125 cc, $340. 213-756-4424. C

Motorcycle, 1959 BMW 600, eng. rebored, incl. parts & repair manual, $50. 213-833-4933. C

Wiglet, 100% human hair, ash blond, never worn, $15. 213-679-9621. C

Radio, Motorola transistor, $12.50. 213-676-6423. C

Stereo, Magnavox, Danish walnut cabinet, record player w/2 15" Woofers, & 2 1.000 cycle horns, 2 yrs. old, $300. 213-835-8950. C

Pups, scotty, 10 wks. old, male, AKC reg., $75. 213-671-1660. C

Calculator, Victor automatic, $375. 213-677-4215. C

Motorcycle, 1967 Honda 305 Scrambler, 1,750 miles, $550. 714-521-8309. C

Engine, 1964 Ford V-8, 352 h.p., 4 Venturi bbls., & auto. trans., $475. 213-222-1154. C

Home, Rolling Hills Ests., corner lot, 4-bdrm., 2 baths, 20 x 40 heated pool, bltins, recently painted, cpts., dps., $45,500. 213-832-4472. C

Train, elec. Lionel & American Flyer, $20. 213-430-2619. C

Lot, ½ acre, P.V. Pen., 5 min. to Nortronics, $25,000. 213-377-8195. C

Camper, 8½' Romer, full cabover, sleeps 4, $700. 213-675-2329. C

Piano, Pacard upright, restyled, $195. 213-320-2639. C

Encyclopedia, Americana, never used, 30-vol. set, walnut bookcase, & annual yearbook, $250. 213-323-1192. C

Boat, 20' Thompson Lapstreak runabout, 160 h.p. inbd.-out drive, $3,750. 213-377-4146. C

Cabinet, hi fi, 34" high, 17" dp. & 33" wide, separate spkr. encls., $50. 213-377-5003. C

Bicycle, girl's 24", $15. 213-325-4737. C

Clock Radio, Westinghouse, never used, $22.50. 714-828-1434. C

Surfboard, 9'6", by Surfside, $68. 213-596-7600. C

Mini Bike, Bonanza, 4 h.p. Tecumseh motor, trail gear, $125. Box 2401. C

Acreage, ½ acre, 100 yds. no. of Lake Los Angeles, Antelope Valley, paved rds., water, zoned R-3, $16,000. Box 2402. C

TV, 23" b&w Packard Bell, maple console, $35. 213-645-5516. C

Motorcycle, Sparta SB50, 50 cc, auto., made in Holland, $125. 213-454-7338. C

Wedding & engagement rings, $100. 213-379-4957. C

Apt, deluxe 4-unit, 1 block from Norair, 4 yrs. old, $64,900. 213-675-5181. C

Piano, spinet, walnut, $450. 213-378-1876. C

Motorcycle, Yamaha, 1966, twin 100 cc, $225. 714-582-6984. C

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., trailer, $750. 714-838-7161. C

Paddle Board, 12', $15. 213-677-7421. C

Seats, for Dune Buggy, $30. 213-371-3065. C

Wig, medium brown, never worn, $75. 714-893-8990. C

Acreage, 2½ acres, Antelope Valley, $42 dn., $42 mo., no int., $4,200. 213-378-1026. C

Reloading Tool, Lee, for a 30/06, $5. 213-860-2305. C

Mini Bike, 8 h.p. West Bend, $135. 213-393-5649. C

Camera, 35 mm Exakta VX-11A, f 2.0 Biotar w/split image penta prism, $90. Box 2403. C

Motorcycle, 1965 Royal Enfield, Interceptor, 750 cc, $750. 213-370-5316. C

Miscellaneous For Sale

Motorcycle, 1964 Yamaha, 250 cc, XDS-4, $275. 213-644-2618. C

Auto Radio, Bowman, AM 5 pushbutton, 1968, $30. 213-327-9338. C

Wanted to Buy

Gun, 357 Ruger or Colt & 9 mm Luger, pistol, reasonable. 213-677-5816. D

Motor Manual, for 1963 VW 1200 Series. 213-861-6404. D

Tools, air-operated, impact wrench, high-speed hand grinder. 714-693-4117. D

Ford, 1932 coupe or parts of same. 714-892-4829. D

Hide-A-Bed or Riviera sofa. 213-534-5498. D

Books, Childcraft, complete set & encyclopedia, World Book. 213-325-8175. D

Barbells, child's set. 213-320-6685. D

Station Wagon, 1965-'68, low mileage, compact or interm., auto. trans. & p/s. Box 2404. D

Power Tools, table saw, grinder, woodworking tools. 714-637-7667. D

For Trade

Beds, 2 single w/matching headboards trade for bunk beds, contemporary walnut. 213-783-8822. E

Dryer, Speed Queen, 220 V. elec., trade for comparable gas dryer. 213-674-3265. E

Rentals Offered

House, 2-bdrm., gar., adults, no pets, $150 mo. 213-676-1013. G

Cabin, Lake Arrowhead Woods Est., sleeps 8, $25 day or $150 wk. 213-373-5164. G

House, 3-bdrm., 1¾ baths, 18' x 22' family, living & dining area, bltins, cpts., dps., $225 mo. 213-324-0709. G

Apt, 2-bdrm., unfurn., h/wood floors, f/place, adults only, close to Northrop, $100 mo. 213-675-1471. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

House, 2-bdrm., lge. fenced yard, 1 mile from Norair, $160 mo. 213-671-9216. G

House, 1-bdrm., unfurn., adults only, $70 mo. redecorated or $55 mo. 213-534-5780. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Cabin, Big Bear Lake, sleeps 9, $25 w/end. 213-867-0662. G

Personals

My deepest & sincere thanks for your thoughtfulness & kindness at the recent loss of my father & serious injury to my mother. OZELL DETZ. L

I wish to express my sincere thanks to all our friends at Northrop & the Northrop Recreation Club for all the gifts, flowers, cards & acts of kindness during the loss of my husband, Robert Martin. JADDIS J. MARTIN. L

My heartfelt thanks to my fellow workers & blood donors for the sympathy & kindness extended to me during the illness & passing of my wife. OLLIE L. DIRRIG. L

Our most grateful thanks for all the many tokens of sympathy, esteem & affection extended to us at the recent illness & death of my beloved husband, Harold M. Sivula. IRENE L. SIVULA & FAMILY. L

My sincere thanks to the Northrop Recreation Club & friends at Nortronics for the cards, flowers & expressions of sympathy in the recent loss of my father. BERNIE DAVIS. L

Anyone from Morningside High School class of 1959, call 213-379-8617 regarding 10-yr. class reunion. L

Rides and Riders

Rides Wanted

6 a.m. — 3:42 p.m.

Century Blvd., San Pedro or Main, Los Angeles. Herculus L. Jackson, Norair ext. 1591, 213-754-4448.

8 a.m. — 4:45 p.m.

Imperial Hwy. & Old River School Rd., Downey. Robert Kirkpatrick, Nortronics Haw. exts. 825, 275, 213-923-0140.

Rides Offered

8 a.m. — 4:45 p.m.

Imperial Hwy. & Old River School Rd., Downey. Robert Kirkpatrick, Nortronics Haw. exts. 825, 275, 213-923-0140.

Personals

I would like to thank all my wonderful friends in Dept. 5911 for the going away party & gifts. MELODY MILLER. L

For Sale or Trade

Ford, 1955, 2-dr. h/top, V-8, auto. trans., $225 or trade for pickup, ½-ton, of equal value. 213-370-2100. M

Junior Achievers Receive Charter After Plant Tour

Keiko, the Junior Achievement Company counseled by Nortronics Anaheim, received its charter during a recent visit of its members to the Anaheim department.

The Junior Achievement Program teaches free enterprise by counseling young people in setting up and operating a corporate-type business during the school year.

The Junior Achievers were welcomed by their company advisors, Bob Varner, management; Don Myers, operations; Tom Sneed, marketing; Bob Barry, financial; Jim Tway, sales; and Tom Maxwell, production.

After touring the electronics, manufacturing and 747 stringer areas, the 16 visiting Junior Achievers were presented their company charter by Don McInnis, director of Ordnance Manufacturing, Page Court. Tom Manoogian, Keiko president, received the charter.

Nortronics has participated in the Junior Achievement program for nine years. Nortronics Hawthorne also counsels a company, Handitac, which will be presented its charter in the near future. Handitac is concentrating on production and expects to have its product available this week. Replicas of the Ranger spacecraft and the biosatellite will be included in the designs planned.

DAVID A. MILLAR, (center), is a Wise Owl now. Lyle Batchman, (left), and Peter Falk, superintendent, Production area, (right), make it official by presenting his membership certificate in the Wise Owl Club of America. The award is presented by the National Society for Prevention of Blindness after an awardee's eyesight has been saved by wearing safety glasses. Mr. Millar, who works on the second shift, Production area, Anaheim, had his glasses shattered but his eyes saved when a chip broke from a piece of metal during a milling operation.

AT CHRISTMAS

Helping the Needy a Northrop Tradition

A tradition as old as Northrop Corporation is being perpetuated once again with the approach of the annual yearend holiday season.

This is the practice of sharing with the less fortunate at Christmas.

The practice is novel in many ways. Above all, it is voluntary. Only those who desire take part. It is carried out by employees entirely.

The tradition began with an idea, now traced to a group of early Northrop employees. They suggested money normally spent on exchange gifts or greeting cards could be pooled and used to a far better advantage—helping the less fortunate.

Thus began the concept of "adopting" families and supplying them all the requirements for a Merry Christmas. At the beginning, as now, the less advantaged people come first.

The generosity of those supporting the program has always far exceeded internal demands for help. Currently, many charitable agencies help supply additional names of families in need in the communities in which Northrop people work. They are cared for in the same way as employees.

In addition, many other agencies and groups are helped each year. They range from individual hospital wards to entire hospitals, homes for the aged, special groups such as Indian Reservations, and many groups where help is urgently needed, not only at Christmas but throughout the year.

The methods of raising funds are almost as varied as the groups they assist. Offices, shops, departments and functions carry them out, usually under the guidance of a committee comprised of employees.

Regardless of the method, the feeling behind the entire program —the desire to help others less fortunate—is the cornerstone of a practice, a tradition that has grown with Northrop Corporation and its people.

New Guide Dog Makes Big Difference to Rudluffs

Northrop friends of Oscar and Margie Rudluff will be pleased to learn of a new addition to their household—a German shepherd named Lee.

Lee came to live with the Rudluffs last month after he and Mr. Rudluff graduated with the 228th class of the Guide Dog for the Blind School at San Rafael. An intensive 28 days of training was required for graduation. Guide Dogs for the Blind is supported completely by voluntary contributions and provides the dogs to the blind with no cost or obligation from the students. Each dog is valued at $3,000.

In a way, Northrop friends helped bring them together.

Mr. Rudluff, known as "Ozzie" worked 18 years in Norair's Tool Engineering and Planning organization. Three years ago diminishing sight forced him to retire from work.

MR. RUDLUFF, LEE

"Northrop friends urged me to get a guide dog," Mr. Rudluff said. "I thought about it for some time before I finally decided I needed the mobility and independence a guide dog could provide."

Margie Rudluff, a 12-year Northrop veteran, now works in Norair's Supersonic Transport organization.

"Ozzie had to make the decision, but having Lee about has made a great difference in our lives," Mrs. Rudluff said. "He tolerates me, but is extremely devoted to Ozzie. I've become accustomed to having him beside the bed, at the door of the bathroom, beneath the dining table, anywhere Ozzie is he is there."

Since losing his sight Mr. Rudluff has taken a keen interest in sight conservation. He heads the sight committee of the Downey Lions Club with the responsibility of providing necessary treatment for school children with sight problems. He also is on the district committee and is chairman of the annual White Cane Drive, and serves as third vice president of the Lions Club. A special telephone - connected recording unit tapes the information needed for his work in sight conservation.

Mr. Rudluff receives instructions for Braille, typing and abacus once a week from a teacher provided by the State Rehabilitation Center. Talking records are provided for his pleasure and relaxation by the Library of Congress.

CASI Told How Computer Control Aids Maintenance

Trends in aerospace technology toward computers in maintenance control was discussed by William Q. Nicholson, chief, Automation Systems R&D, Nortronics Anaheim, at the Canadian Aeronautics and Space Institute, Montreal, Canada, on November 27.

Mr. Nicholson discussed examples of automatic test and checkout systems, including the Nortronics-built TEAMS used by the U.S. Navy, automatic test systems for Polaris and Poseidon, and the Northrop 1060A computer used in the MADAR.

"Examples of maintenance functions that lend themselves to computer automation include failure prediction, fault detection, fault location and isolation, maintenance advice, performance assessment, maintenance record keeping, and integrated logistics support," Mr. Nicholson told the group.

The computer in maintenance control promises not only better maintenance at lower cost, but a better match between acquisition and life cycle cost, he added.

NRC GEM CLUB SETS ILLUSTRATED TALK

An unusual program has been scheduled by the NRC Gem and Mineral Club at the NRC Clubhouse in Fullerton on January 6, according to Gaylord Miller, club commissioner.

Dave Johnson, former Nortronics employee, will deliver an illustrated lecture on rock hunting and photography in the Northwest Territory of Canada.

"The nature of Mr. Johnson's presentation makes it appealing to a wider group than just our rock hounds," Mr. Miller said. "Photographers, nature lovers, and travel fans will all find it fascinating. Everyone is cordially invited."

Additional information may be obtained from Mr. Miller at ext. 587, Anaheim. The meeting will start at 7:30 p.m. and is free.

A FUNNY GUY

Jean Louvier of Northrop Toastmasters Club has won first place in the District 50 Humorous Speech Contest held in Santa Monica.

Finalists represented 36 clubs with a combined membership of some 1,000. Mr. Louvier won club, then area honors to earn a place in the district finals.

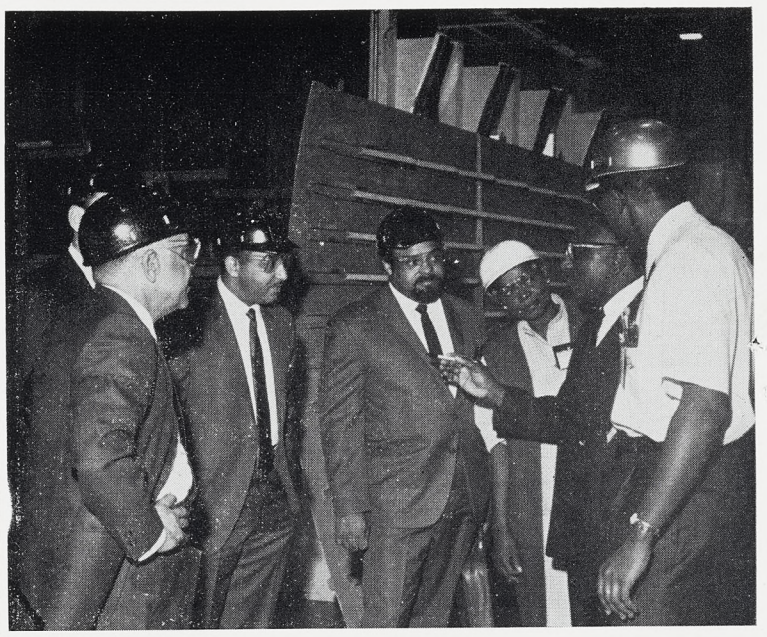
Candy Sales at Ventura Will Aid Needy Families

The annual Christmas candy sale at Northrop Ventura is in progress this week, according to Dorothy Prychoda, Northrop Ventura Recreation Club president-elect.

By special arrangement with See's Candy Shops, Inc., in Los Angeles, the NVRC will provide boxes of See's candy to Northrop employees at the lower-than-retail price of $1.50 per pound including tax.

Ticket sales will continue through this week with NVRC candy representatives available in the cafeteria and on the mall during lunch hour. Distribution of the candy will begin December 17 in the cafeteria.

ACE HIGH in the recent Nortronics Anaheim noontime duplicate bridge tournament was the team of Jim Doyce (left) and Bill Powell who took first place in competition against eight other teams. The noontimers play each day during their lunch hour.



URBAN LEAGUE leaders from Los Angeles area visited Norair recently for plant tour and talks. Norair's Bob Jones (right) and Harold Washington (pointing) taik with (from left) Dallas Martin, Dr. Frank Stanley, Urban League executive director, Dr. Neil Dorian and Mrs. Essie Robertson.

Christmas Parties Set for Youngsters at Three Sites

Christmas is a special time for the young and Northrop Recreation Clubs have this foremost in mind as they plan a series of parties for the sons and daughters of Northrop employees.

Because Northrop families reside at such widely-scattered points in the Southland, parties are being planned for three locations, each for a special group.

December 8 will find the youngsters of Corporate, Norair and Nortronics Hawthorne and Palos Verdes personnel gathering at the Shrine Auditorium, Los Angeles. Northrop Ventura youth will gather at the Ventura plant site December 14 for their big party. And on December 15, Nortronics Anaheim youngsters will be feted at the NRC Clubhouse, Fullerton.

Shrine Auditorium

The expected turnout for this event, the 28th Annual Northrop Christmas Party, requires identical parties to be held at 10 a.m., 1:30 and 4:30 p.m.

Features will include film cartoons, the acrobatic Hardy Family, the Wheelers Marimba Trio and other surprises. Santa Claus will be on hand to greet youngsters and to discuss their Christmas wishes.

Tickets for these events, each specifying a particular show, have been mailed to all who requested them.

Ventura

The beautiful Ventura Division grounds are being specially prepared for the expected visit of Ventura youngsters between 10 a.m. and noon.

Festivities will include special entertainment, free surprises for all and a visit from Santa Claus and his helpers.

Anaheim

NRC's Clubhouse at Fullerton is also receiving special decorations for a show slated between noon and 4 p.m.

There will be special rides and entertainment, plus surprises for all youngsters attending. And Santa Claus will make his traditional appearance. Reservations for this event were due last week.

New ASTME Chapter Now In Operation

With the organization of a newly-formed American Society of Tool and Manufacturing Engineers Ventura/Santa Barbara chapter, all three West Coast divisions of Northrop now have employees affiliated with local ASTME societies.

Before the Ventura/Santa Barbara chapter originated two months ago, Northrop Ventura members had to participate in Los Angeles County chapters, often commuting 100 miles or more to attend regular society meetings and functions.

Already the new affiliated chapter has enrolled more than 75 members since the organizational meeting in October when 46 became charter members. By the December meeting more than 100 are expected to be enrolled and prospects are for a total membership of 150 members by the middle of next year.

Twenty-four from Northrop Ventura are now participating and another dozen are expected to affiliate by next summer.

Information about qualifications for membership is available from Bill Craig (Ventura ext. 1129) chairman of the membership committee.

Three others from Northrop Ventura hold special committee appointments. They are Bill Kearney, program committee; Ralph Basco, bylaws committee; and Al Robinson, chairman of the educational committee.

NORTHROP NEWS

Holiday Greetings

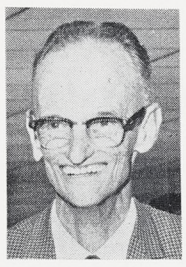
Published biweekly by Northrop Corporation, Beverly Hills, California Vol. 26, No. 25 December 18, 1968

NORTRONICS DIVIDED INTO TWO NEW DIVISIONS

NORTHROP NEWSMAKERS

Northrop Corporation's first technical writer, **E. W. "Pop" Jones,** formerly of Norair, has entered retirement on a rather interesting note.

Mr. Jones joined Northrop in June 1940 and his first assignment involved writing technical material on the NP3 destined for use by the Royal Norwegian Air Force. His final assignment prior to retirement was updating and maintenance of manuals for Norway's F-5A and F-5B. Between the two was a timespan of 28 years.



Mr. Jones

* * *

B. R. Swift, Ventura, will teach a University of California Extension course on grievance and arbitration techniques to be taught during the winter semester.

* * *

W. A. Boyes, sr., Norair, has been installed as national treasurer of the American Power Boat Association.

Mr. Boyes moved into his new post after having served for two years as chairman of Southwestern United States for the association.

* * *

Rocklin Farquhar, 15, son of **George Farquhar,** Norair, will appear on the Torrance float in the annual Rose Parade this year.

The float, titled "Sunday in the Park," will feature Miss California of 1968 and Miss Torrance, plus a 10-piece band playing melodies of the gay 90's. Young Mr. Farquhar, who plays first trumpet for the Torrance Area Youth Band, will be a key member of this brass section.

FINAL EDITION

Northrop News staff members will join fellow Northrop employees in enjoying the long yearend holiday period just ahead, so this is the final edition planned for 1968.

The first edition of Northrop News to be published in 1969 will be distributed January 15. Deadline for news copy and classified ads will be January 8.

Frederick Stevens Named For Important New Post

Paving the way for further growth at Northrop, two new operating divisions will be created from the Nortronics Division.

Establishment of the two new divisions, which represents a major step in Northrop's blueprint for long range expansion, was announced Tuesday by President Thomas V. Jones.

Frederick Stevens, who has been vice president and general manager of the Nortronics Division for the past seven years, will become vice president, Corporate Diversification, and will move to new offices at company headquarters in Beverly Hills.

The two new divisions will be known as the Electronics Division of Northrop Corporation, headed by Ross F. Miller, and the Electro-Mechanical Division of Northrop Corporation, headed by Frank W. Lynch. Both Mr. Miller and Mr. Lynch will have the title of vice president and general manager.

In a related assignment, D. L. Lewis, vice president and manager of the Finance Department, will join the Corporate Finance staff as a vice president reporting to the Corporate vice president, Finance.

These assignments will become effective February 1.

"At this time, Northrop's long range planning provides a clear definition of our growth goals for the 1970's and an understanding of the sources from which the growth will come," Mr. Jones explained. "While our principal growth will be internally generated, we will continue to pursue a program of logically-selected acquisitions. The size of the company and the rate of its growth have evolved to a point which demands that strong leadership in these activities be applied at the highest level.

"To implement this objective Mr. Stevens will assume the new post of vice president, Corporate Diversification. In pursuing this program our purpose will be to develop diversification that is compatible with Northrop planning and which will contribute logically to our business strength. In his new post, Mr. Stevens will report directly to the president. Of special value to this activity will be Mr. Stevens' background as a general manager and his experience in the leadership and management of projects with a high technical content.

"The organization of the present Nortronics activities into two divisions will provide a better mechanism not only for business growth but for a more sensitive

(See NEW DIVISIONS, page 5)

Apollo 8 Lunar Mission Countdown in Progress

With a 101-hour prelaunch countdown in progress since Monday, all systems are "go" as the NASA Apollo 8 lunar orbital Christmas mission approaches its scheduled launch less than 72 hours from now.

The Northrop Ventura-built Earth Landing System will again be riding atop the Apollo command service module, awaiting its task in the closing minutes of the mission. The landing system, similar to the one which safely returned the Apollo 7 astronauts, will remain virtually unchanged for its role in the Apollo 8 flight.

If all goes well between now and Saturday morning at 6:45 a.m. (PST), Apollo 8 Astronauts Frank Borman, James A. Lovell, jr., and William A. Anders will be boosted into space from Cape Kennedy with 7,500,000 pounds of thrust from the powerful Saturn V launch vehicle. The 6.2-day mission has been designed to make 10 orbits of the moon and return home two days after Christmas.

The spacecraft will spend 20 hours around the moon, coming as close as 60 miles to take still and motion pictures of the proposed landing and landmark tracking sites.

In addition, the crew will perform a thorough checkout of the spacecraft's navigation system while in moon orbit. The mission will also complete the final verification of ground support elements and spacecraft onboard computer programs and confirm the ability of the crew to utilize landmarks during a lunar mission.

In the event a decision is made not to enter lunar orbit, Apollo 8 will circle the moon and return to earth on a so-called free-return trajectory.

According to Lt. General Samuel C. Phillips, NASA Apollo program director, a second Apollo mission to the vicinity of the moon could come next summer if no serious problems develop. Unlike Apollo 8, that mission would include the two-man lunar landing vehicle in addition to the command service module. The entire vehicle would be put into orbit around the moon. Two of the three astronauts could then enter the landing vehicle, separate from the command ship, and descend to about 50,000 feet from the moon's surface.

Guidance Test Symposium Shown C-5 IDNE Systems

Northrop Nortronics' Navigation department has displayed the C-5 Inertial Doppler Navigation System both in static displays and installed in an Air Force Lockheed C-130 at the Fourth Biennial Guidance Test Symposium at Holloman AFB, New Mexico.

The system is being developed by Northrop for the world's largest aircraft—the USAF C-5A being built by Lockheed-Georgia Company.

Keynote speaker for the symposium was General James Ferguson, commander, Air Force Systems Command. General Ferguson told his audience of over 400 guidance experts that the United States leads the world in guidance system development.

"I have heard a lot of talk that because we moved so rapidly in this field and are so far ahead, we can afford to turn on the autopilot and relax a bit," the general said. "This is a dangerous state of complacency. We cannot maintain the status quo, and I include slight advances as status quo."

The Systems Command commander added that it would be unwise to let another country take the lead in technology through our own lack of decisive effort.

"We must, at all times, maintain a technical momentum in order for our nation to maintain adequate strength across the entire spectrum of deterrence," he said.

SYMPHONAIRES IN MUSIC FESTIVAL

The Northrop Symphonaires will appear in a Christmas Music and Art Festival sponsored by the Fine Arts Association of Centinela Valley, December 21 at 8 p.m. in the Hawthorne Memorial Center.

An art show by the Hawthorne Art League will be presented during intermission.

Shareholders Told Northrop Expecting Continuation of Earnings Expansion

Thomas V. Jones, president and chairman of Northrop Corporation, told the company's shareholders at their annual meeting last week that "we expect to continue to expand our earnings per share as we move into the future."

Noting that earnings per share registered an average growth of 20 per cent per year over the last five years, Mr. Jones declared that "as I see the programs and opportunities ahead of us, I feel justified in expressing confidence that we have established ourselves on a growth curve."

Fiscal year 1968 produced the highest sales and total net earnings in the company's history. Earnings per share increased 25 per cent over the previous year. Earnings for the first quarter, which ended October 31, were 27 per cent higher than in the first quarter of last year.

Mr. Jones pointed to the growth of the company's sales in electronics and communications as an important development and cited the change in Northrop's product mix as a factor in the firm's improved ratio of profit to sales, from 2.7 per cent in fiscal 1967 to 3.2 per cent in fiscal 1968.

Citing the projected need for communications systems throughout the world, Mr. Jones declared, "The opportunities for Northrop in the communications field may well provide one of our greatest growth areas in the future."

NORTHROP SHAREHOLDERS gathered at the Hawthorne Memorial Center last week for their annual meeting. President Thomas V. Jones (left) chats with 13-year-old shareholder Clyde Steele of San Luis Obispo and his grandfather, Newton H. Anderson of Santa Monica. Two interested participants (center) inspect a Northrop Inertial Doppler C-5A Navigation System, part of an outstanding display of Northrop products on hand. President Jones (right) is flanked by members of the board of directors as he reports to shareholders. Mr. Jones said Northrop expects a continuation of expanded earnings experienced over the past five years. Earnings per share have registered an average growth of 20 per cent per year.

What Plans Have You Made for The Long Yearend Holiday?

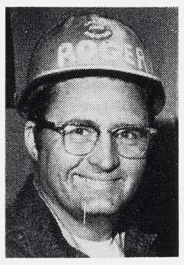
Mrs. Walters

Trudy Walters, Data Processing, Nortronics Anaheim:

My daughter and three-month-old granddaughter are flying in from St. Louis during the holidays. So, I suspect my vacation will be spent babysitting and washing diapers. It may not sound exciting, but I'm looking forward to it more than any Christmas I've spent in a long, long time.

Roger Blackmer, equipment builder, Norair:

If I am not working, we will load the family —my wife, mother and five daughters, ages 5 to 18—in the camper and go to our cabin at Twentynine Palms. Depending upon the weather, we will go boating on the Salton Sea or tobogganing at Big Bear. California is wonderful, so is Northrop for giving us the time off to enjoy it all.



Mr. Blackmer

Mrs. Stripling

Curtistine Stripling, technical librarian, Ventura:

Since my husband and I both work here at Northrop Ventura we have purchased a home in Newbury Park. So, we'll be using the yearend holiday to do all of the unpacking and settling that is necessary. My husband, Moss, who's an engineer will be starting our landscaping during the holiday.

Sharon Saddler, Command and Control, Nortronics Palos Verdes:

After the usual time spent wrapping presents for others, unwrapping my own and visiting, I'm just going to take things easy. When I get tired of taking things easy, then I'll take things easier for the rest of the time.

Miss Saddler

Mr. Castelli

Livio Castelli, photographer, Norair:

I plan to relive an event that happened almost 30 years ago—a visit to Death Valley. I went there as a school boy and camped out. This time I'll enjoy more comforts. I want to take a lot of pictures, then compare them with others I took 30 years ago. It might prove interesting.

Anne Reichert, sewing machine operator, Ventura:

We're going to Las Vegas the day after Christmas and then come home in time to serve leg of pork and sauerkraut to four generations of our family. We're having pork because by German tradition the belief is that serving fowl on New Year's Day will "scratch your luck away."

Mrs. Reichert

Mrs. Baer

Phyllis M. Baer, secretary, Nortronics Anaheim:

I like to be with my relatives at Christmas time. The long Northrop holiday will give me an opportunity to visit both my sister and my husband's family back in Idaho. The trip is also attractive because the cold and snow will make it seem more like an old-fashioned Christmas.

Willie Brown, machine parts inspector, Mariposa:

Since we have 13 children, my wife and I have no plans to leave home. During the holidays we'll have lots of relatives dropping in. We'll have about 33 at our place on Christmas Day, including eight grandchildren. After that, we'll just take it easy until New Year's.

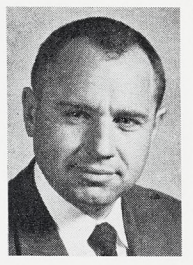
Mr. Brown

Mrs. Massey

Rachel Massey, technical illustrator, Ventura:

Ordinarily I love to draw portraits in whatever small amounts of spare time I can find. But for the long yearend holiday I'm looking forward to returning to oil painting which requires daylight time and long hours. In particular, I hope to capture the great feeling of peace and quiet which I found on my recent vacation in King's Canyon.

Christmas Greetings



To the Men and Women of Northrop:

Every year---as we become more involved in the world about us—it becomes more important to pause for reflection upon those things which make our lives worthwhile.

This is why I welcome the holiday season as a time to express my appreciation to the people of Northrop. There are more than 25,000 of us now and each one has contributed something of value to the best year in the company's history. I am confident that your competence and loyalty will lead us to even better years ahead.

Mrs. Jones and I wish you a warm and happy holiday season and we hope 1969 will be a healthy and prosperous year for you and your family.

Thomas V. Jones
President
Northrop Corporation

To Northrop Nortronics Personnel:

I wish it were possible personally to wish each one of you a Merry Christmas. I'm sure that such a message would carry more meaning than the words in this column; however, I want to express here my appreciation to all of you for your efforts in behalf of our company during the past year.

As we pause and find time to spend with our families and friends during our traditional yearend holiday, let us reaffirm our efforts toward Peace on Earth, Good Will Toward Men every day of the coming year. It is my sincere hope and wish that each of you and your families have a happy and peaceful Christmas.

Mrs. Stevens joins me in wishing you and your loved ones the very best Christmas and a Happy New Year.

Frederick Stevens
Corporate Vice President
Nortronics General Manager

YEAREND HOLIDAY

Still a Benefit Without Precedence

By Alan C. Morgan, Vice President-Industrial Relations

Now in its 23rd year, Northrop's fully paid yearend holiday extending usually from Christmas Day through New Year's Day, is still the only benefit of its kind granted employees by a major Southern California industrial organization.

Additionally, Northrop is one of only a few major concerns that grants a two-week, two-day annual vacation after only one year of continuous employment, along with six paid holidays in the calendar year, including two special "floating" holidays. Northrop's 11 paid holidays during the year in addition to the annual vacation and paid sick leave add up to more than a month of working days.

Mr. Morgan

Probably the greatest benefit of Northrop's vacation and holiday programs is that they are planned to grant more days off continuously, rather than piecemeal during the year, permitting employees to plan travel and other leisure time activities that require more than a single day.

The yearend plan had its origin in a Northrop Industrial Relations proposal to make the company's sick leave benefits more attractive than those of other firms in the area. Instead of paying employees for a given number of sick leave days during the year, it was decided that continuous time off would be granted at Christmas, when most employees want to be at home with their families and friends.

Northrop has long been a leader in using imaginative thinking in the planning of fringe benefits so that the employees' needs and desires are best served for each dollar spent.

As we approach the yearend holiday, let us all remember our Northrop adopted families so that these less fortunate families may all share in the spirit of Christmas.

Have a happy yearend holiday and many more at Northrop.

VENTURANS PLAN HOLIDAY TOURNEY

A yearend holiday golf tournament has been set for Northrop Ventura golfers on December 30, according to Dick Kipp, commissioner.

Action will be at Soule Park Golf Course, Ojai. Tee off time is 8 a.m.

Green fees are $2.50 and golf carts will be available for rental at $7. Deadline for entry is Friday.

Jones Tells of Growth Plans At Northrop

"The state of the company is good. It is also challenging and demanding."

Thus did President Thomas V. Jones begin his annual "state of the company" message to the Norair Management Club last Friday.

Addressing the largest gathering in the history of the Norair Club, Mr. Jones declared, "If you look back over the fiscal year that ended last July 31, you see a record of substantial growth and good results. If you look back over the first three months of the present fiscal year, you see that growth and those results continuing.

"But when you look ahead to the build-up we still have ahead of us—when you see the immensity of the tasks we have taken on —you know that we are going to have to do a mighty good job all the way if we are to maintain our upward trend lines."

Pointing to the record sales and earnings of 1968, Mr. Jones said, "As I see the programs and opportunities ahead of us, I feel justified in expressing confidence that we have established ourselves on a growth curve. Our operating plans indicate that we will reach a level approaching $700 million in sales in 1970, and with the help of a few acquisitions we would expect to approach a billion dollars in volume by 1972."

Northrop Prepares 1,000th T-38 for Delivery to USAF

The 1,000th Northrop T-38 supersonic trainer to be built for the U.S. Air Force will be delivered January 7 in special ceremonies at Palmdale.

Lt. General Sam Maddux, jr., commander, Air Training Command (ATC), will accept the aircraft from Maj. General Daniel E. Riley, commander of the Air Force Contract Management Division. Thomas V. Jones, Northrop president, will make the official presentation of the aircraft to General Riley.

Approximately 270 Air Force and industry personnel are expected to attend the ceremonies.

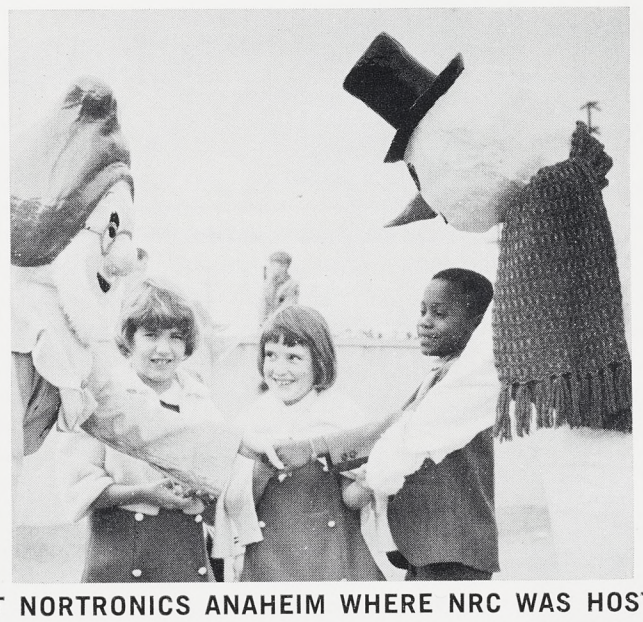
Since the T-38 first entered the Air Force in 1961, nearly 11,000 ATC students have graduated from the pilot training program following final training in T-38's. Currently, T-38's are being flown about 40,000 hours per month and have amassed a total approaching two million flight hours since entering service.

Next summer, the 10th ATC base utilizing the Northrop T-38 in undergraduate pilot training will be activated at Columbus AFB, Mississippi.

The T-38 has the best safety record of any supersonic aircraft in the USAF inventory.

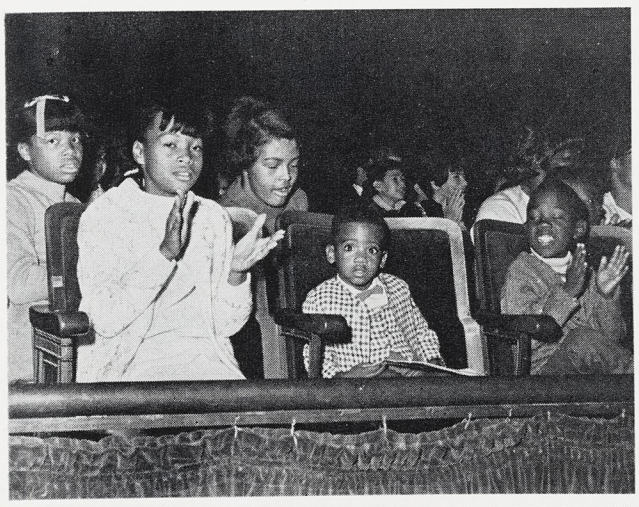
In addition to Air Force use, the T-38 is being used by NASA for flight readiness training of astronauts. Forty-three T-38's are in use by the German Air Force in training its student pilots at Sheppard AFB, Texas.

NRC Christmas Parties Delight The Young at Heart



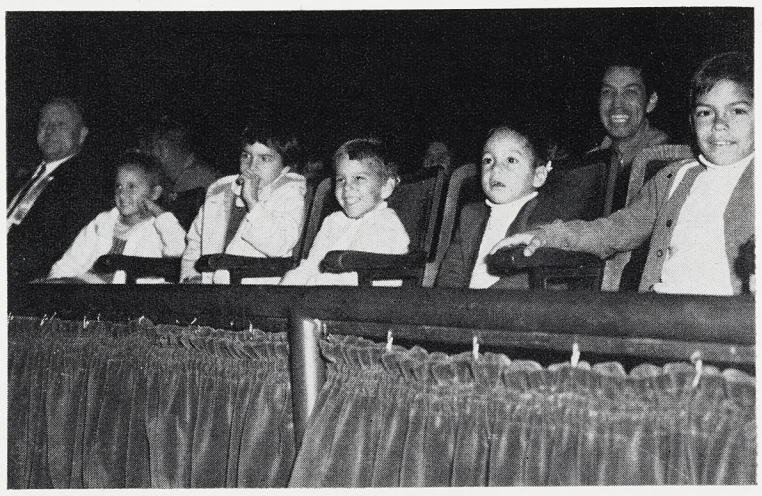
THE SCENES ABOVE WERE SNAPPED AT NORTRONICS ANAHEIM WHERE NRC WAS HOST TO 2,500 ADULTS AND YOUNGSTERS.

NORTHROP VENTURA'S CHRISTMAS PARTY (ABOVE) FEATURED ANIMAL ACTS, SANTA CLAUS, GIFTS AND REFRESHMENTS.



NORTHROP'S 28th annual Children's Christmas Party at the Shrine Auditorium, December 8, entertained a crowd of 17,500 at three shows. The photographs surrounding this caption highlight activities there. More than 100 volunteer workers assisted Northrop Recreation Clubs in staging the event.

Photos by Ron McGaffin



Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Station Wagon, 1962 Rambler, 4-dr., Hydramatic, $350. 213-632-1666. A

Econoline, 1967 Supervan, Big 6, auto., hvy. duty, $1,995. 213-378-8136. A

Buick, 1962, Special, DeLuxe V-6, r/h, auto. trans., $550. 213-320-5627. A

Chevrolet, 1967 Impala S.S., 2-dr. h/top, 396, Turbo Hydramatic, p/disc brakes, p/s, a/c, sp. suspension, $2,500. 213-323-7544. A

Corvette, 1965 Sting Ray, 327/365 h.p., 4-spd., posi., air, $2,995. 213-831-4586. A

Buick, 1962 Electra 225, 2-dr. h/top, fully equipped, $850. 213-324-2992. A

MG, 1957, $500. 213-545-3495. A

Chevelle, 1964, Malibu S.S., 283 cu. in., 4-bbl. carb., 4-spd., synchro-mesh trans., r/h, $1,295. 213-776-0393. A

Chrysler, 1957 New Yorker, $100. 213-423-5956. A

Dune Buggy, VW chassis, '67 eng., $2,000. 213-377-5059. A

Corvette, 1965 convt., 300 h.p., 4-spd. trans., AM-FM radio, posi. $2,395. 213-472-2551. A

Dune Buggy, VW, w/tow bar, $850. 213-377-3563. A

Volkswagen, 1963 bus, reblt. eng., new clutch & brakes, $1,150. 213-372-5639. A

Opel, 1968 Kadett LS Deluxe sports cpe., 1500 cc eng., w/hvy. duty drive train, r/h, $1,900. 213-644-6935. A

Volkswagen, 1966 sedan, r/h, $1,250. 213-422-4942. A

MGB-GT, 1967, 4 cycle 98 h.p., AM-FM radio, $2,700. 714-528-6914. A

T-Bird, 1955, stick shift & o/drive, 2 tops, needs work, $900. 213-833-4198. A

Chevrolet, 1965 Impala S.S., 2-dr. h/top, V-8, auto. trans., p/s, r/h, $1,595. 714-826-2209.

Volkswagen, 1967 fastback, AM-FM radio, $1,775. 213-323-8089. A

Grand Prix, 1962, all power, air, $750. 213-754-3914. A

Edsel, 1958 Pacer, h/top, $800. 213-325-1571. A

Oldsmobile, 1963 98 h/top, full power, $795. 213-735-0926. A

Buick, 1963 Special, 4-dr., V-6, $350. 213-675-2448. A

El Camino, 1959, $700. 213-675-8822, 213-679-8397. A

Buick, 1963 Riviera, full power, a/c, $1,150. 213-370-9170, 213-672-1868. A

Ford, 1960 Starliner, $225. 213-866-2785. A

Mustang, 1967 Fastback, 289 2+2, p/s, fact. air, $1,950. 213-671-2930. A

T-Bird, 1955, newly o/hauled eng., p/b, 2 tops, $1,650. 213-379-1031. A

Mustang, 1965, auto. V-8, 289, d/brakes, $1,495. 213-374-3943. A

Chevrolet, 1955 Nomad, new paint & int., $750. 213-635-3824. A

Pontiac, 1966 Tempest, sport cpe., 250 h.p., V-8 eng., auto. trans., $1,295. 213-370-3821.

Chevrolet, 1956, 2-dr., 295 eng., stick, $350. 213-670-4702. A

Ford, 1963, 4-spd. trans., 4-bbl. carb., $650. 213-865-0197. A

Ford, 1961 Galaxie, a/c, p/s, r/h, Fordomatic trans. needs work, $100. 213-370-9558.

Pontiac, 1965 GTO, Hurst 4-spd., tri-carbs, hvy. duty suspension, p/s, AM-FM, $1,700. 805-495-8077. A

Rambler, 1962 Classic, 2-dr., $400. 213-474-5644. A

Corvette, 1966, 300 h.p., 4-spd., removable h/top, $2,990. 213-391-3715. A

T-Bird, 1960 p/windows & seat, $350. 213-370-6444. A

Camaro, 1967, fact. air, auto. trans., r/h, p/s, $2,300. 213-374-6841. A

Volkswagen, 1955, r/h, $150. 213-534-2419.

T-Bird, 1965, d/brakes, fact. air, AM-FM radio, full power, $2,100. 213-374-1674. A

Corvair, 1966 Monza, $1,350. 213-892-0035. A

Chevrolet, 1959, 2-dr., p/s, auto., $175. 213-674-5793. A

Cadillac, 1949, 4-dr., $200. 714-635-0627. A

Dodge, 1961, 4-dr., new tires, $495. 213-676-4126. A

Volkswagen, 1967, suntop, radio, $1,600. 213-772-5752. A

Pickup Truck, 1967 Dodge, 8' bed, a/c, r/h, 225 cu. in., 6-cyl., 3-spd., $1,700. 213-532-7175. A

Station Wagon, 1962 Olds F85, 9 pass., a/c, p/b, p/s, r/h, $595. 213-755-7166. A

Firebird, 1968, 9,000 mi., 6-cyl., full power, radio, stereo, $3,000. 213-377-8609. A

Volkswagen, 1966, w/VW a/c, $1,450. 213-378-7479. A

Volkswagen, 1966 Camper, completely equip., $200 & take over 20 pymts. of $113 ea., $2,260 approx. bal. 213-377-3244. A

Automobiles For Sale

Ford, 1962 Fairlane 6, r/h, $275. 213-320-8833. A

T-Bird, 1960, a/c, $625. 213-673-2559. A

Pickup, 1964 Ford, 3-spd., std. trans. w/ overdrive, 292 V-8 eng., $1,095. 714-827-7189. A

Porsche, 1960, sunroof, new clutch & paint, $2,100. 213-644-6475. A

Porsche, 1967 912, 4-spd., AM-FM-SW radio, $4,500. 213-439-4600. A

Chevrolet, 1964 Biscayne, 2-dr., std. trans., 6-cyl., p/s, r/h, $725. 213-675-4553. A

Chevrolet, 1959 Impala, 2-dr. h/top, p/s, p/b, r/h, $400. 213-378-2930. A

Buick, 1965 Riviera GS, full power, a/c, $2,500. 213-370-2991. A

Porsche, 1968 912, chrome whls., AM-FM radio, $5,150. 213-324-8636, 213-324-3669. A

Household Items For Sale

Dryer, Speed Queen, 220 V., elec., $50. 213-671-0859. B

Rocking Chair, mahogany, antique, $75. 213-823-1910. B

Washer, 1962 Maytag, recently reblt., $35. 714-639-2509. B

Youth Bed, dresser, Edison, 1 yr. old, $75. 213-679-0848. B

Cedar Chest, 19"x44", walnut, $15. 213-675-6020. B

Table, birch Harvest, w/pads, 4'x6', $135. 714-774-4853. B

Deep Fryer, Sunbeam, $7.50. 213-377-3806. B

Bedroom Suite, blonde, $75. 213-833-0742. B

Dishwasher, 1967 G.E. portable, top loader, white, $90. 213-645-5786. B

Sofa, pale blue & silver, $25. 213-672-5647.

Dinette Table, 4 chairs, $25. 213-329-9664. B

End Tables, oiled walnut, incl. coffee table, $35. 213-326-0340. B

Stove, Norge, gas, $40. 213-326-1178. B

Box Spring, mattress, twin size, w/bookcase headboard, maple, $40. 213-472-2818. B

Dinette Set, chrome, 8 chairs, beige & brown, $75. 213-672-4511. B

Silverware, 129 pcs., monogram C, silverplate, w/chest, $60. 213-673-1133. B

Dining Table, antique, dropleaf, walnut, seats 8, $75. 213-373-5164. B

Dining Room Set, dropleaf French provincial, 4 chairs, $75. 213-823-1564. B

Dinette Set, table, formica top, 6 hi-back chairs, $65. 213-674-8361, 213-645-8067. B

Rug, 9x12, modacrylic fiber shag, 2 shades of gold, used 1 month, $99. 714-633-3657. B

China, Wentworth Silver Wheat pattern, serv. for 8, incl. snack set, extra cups, $80. 213-676-6303. B

Range, white, Gaffers & Sattler, 5½ yrs. old, full size, $65. 714-839-2139. B

Bed Set, twin, firm ortho. mattresses, box springs, walnut-stained bedsteads, $95. 213-377-5936. B

Sewing Machine, Universal Deluxe Streamliner, all attachments, $75. 213-831-6969. B

Miscellaneous For Sale

Lawnmower, Sears lightweight, $25. 213-532-8294. C

Air Conditioner, ¾ h.p., Coldspot, $35. 213-327-5376. C

Sliding Glass Doors, windows & channel, 15' sec. & 6' sec., $105 or sell sep. 213-861-6404. C

Helmet w/tinted plastic bubble, $25. 213-534-3100. C

Wedding Dress, Cahill gown, ivory brocade, chapel train, long sleeve, empire styling w/ veil, size 10, $60. 213-679-4241. C

Cemetery Lots, Inglewood Park, 2 dble., Park Terrace, $780 ea. 213-324-1914. C

Chord Organ, $18. 213-676-5101. C

Air Compressor, portable, 1½ h.p., 230 V., 10-gal. tank, trailer hitch, 2 50' hoses, $250. 213-677-4215. C

Rifle, British 303 Enfield, w/cleaning kit & 150 rounds ammo, $50. 213-644-2618. C

Rocking Horse, Wonder Mare, $12. 213-376-8250. C

Pup, poodle, AKC reg., black male, $50. 213-754-3665. C

Tire Chains, fit 7.10-15 or 8.00-14 tires, $5. 213-294-6390. C

Road Race Set, Riverside Monogram, 2 cars, 1/24 scale, $60. 213-676-8738. C

Utility Trailer, 4x8, $125. 213-326-1409. C

Organ, Conn, light walnut, full size key boards & pedal, $750. 213-542-3450. C

Sailboat, 28' wooden sloop, inbd. eng., dacron sails, sleeps 4, $4,900. 213-378-4352. C

Projector, RCA mod. 400, 16mm sound, $125. 213-324-0086. C

Bicycle, girl's 24" Schwinn, $17. 213-324-8853. C

Wig, deep auburn, human hair, w/stand & box, $25. 213-448-9620. C

Grills, for fireplace, Heat-A-Lator, $7. 213-376-4831. C

Bicycle, 10-spd. Derailleur full Campagnolo equipt., 21" frame, $69. 213-376-5139. C

Tire Chains, for VW or similar size, $7.50. 213-889-0326. C

Swing Set, tubular steel w/3 swings & teeter totter, $10. 213-370-7092. C

Golf Clubs, 1, 2, 3, 4 Wilson woods, & 2-9 Spalding Elite irons, sand & pitching wedges, $130. 213-375-4340. C

Ski Poles & sport car rack, $20. 213-329-2740. C

Pups, miniature dachshund, AKC, $100. 213-833-3944. C

Miscellaneous For Sale

Bicycle, girl's 26", $15. 213-324-7730. C

Pups, poodle, 6 wks. old, sassafras toy lineage, AKC reg., males, $100; females, $125. 213-375-1660. C

Movie Outfit, Technicolor, Super VI 8 mm camera & projector mod. 580 & screen, take over $19.27 mo. pymts., $582 approx. bal. 213-645-8611. C

Cabin Cruiser, 21', 283 cu. in. Chev. inboard, incl. trailer & all equip., $3,000. 213-542-2098. C

Sailboat, Cascade 29, partially complete, fiberglass hull & cast iron keel, $3,200. 213-329-9882. C

Sailboat, 37' Zeeland cutter-yawl, diesel, fully founded, $21,000. 213-672-7424. C

Ski Kite, Banta w/slalom conversion, $99. 213-343-8665. C

Encyclopedia, Grolier, set, w/yearbooks & shelf, $75. 213-396-6739. C

Camper, 8' cabover, $400. 213-374-7059. C

TV, portable, needs work, $20. 213-373-3792.

Motorcycle, 1966 Triumph Bonneville, 650 cc, extras, $875. 213-363-3843. C

Motorcycle, Honda, CB 160, extras, $325. 213-638-2457. C

Tricycle, Murray, 10", $9. 213-321-2674. C

Spoke Wheels, 5 restored 1934 Ford, 17", w/tires & tubes, $20. 213-641-1393. C

Boat, 16', mahogany, lapstrake, 75 h.p. Evinrude, 12-gal. tanks, full cover, incl. 2 mos. slip rent, $750. 213-677-1681. C

Guitar, elec., Fender Stratocaster, & case, $175. 213-371-9925. C

Chain Saw, Homelite, gear dr., 36" cutter bar & chain, $85. 213-375-0915. C

Fur Stole, worn twice, $250. 213-326-2138. C

Doors for Volkswagen, $10 ea., other parts, sell sep. 213-644-8385. C

Drums, complete set, $175. 213-755-0014. C

Piano, spinet, $450. 213-323-0029. C

Trailer, 8'x35', 1954 Glider Coach w/cabana, furn. within walking distance of Northrop, $1,150. 213-676-7387. C

Telescope, astronomical, 50mm lens, rack & pinion focusing, deluxe wood case, $30. 213-323-6717. C

House, 4-bdrm., 2 baths, 3 mi. from Nort. Anaheim, a/c, f/place, new paint & cpts., $25,250. 714-871-7640. C

Guitar, Silvertone, $20. 213-372-3827. C

Tire Chains, will fit 6:00x15, 6.50x14, 6.40x14, $8. 213-325-2512. C

Train Set, American Flyer, $20. 714-826-4031.

Record Player, 1967 R.C.A. portable stereo, 6 spkrs. w/detach boxes, $95. 213-374-3376.

Motorcycle, 1966 Suzuki, 250cc X6 Hustler, $275. 213-377-1008. C

Saw, Craftsman radial arm, incl. 10" & 7" blades, steel cabinet w/drwr., other extras, $250. 213-328-9827. C

R. C. Airplane model, w/10 ch. Kraft Reed transmitter & receiver, .45 eng., $100. 213-378-7478. C

Sailboat, 45' Supersatellite, many extras, trailer, $695. 805-483-5644. C

Acreage, 1 acre, Lake Los Angeles, $800 & take over $40 mo. pymts., $3,700 approx. bal. 805-526-7767. C

House, 2-bdrm., new paint, cpts., dps., dble. det. gar., 15 min. from Northrop, 20% financing, $19,000. 213-323-2753, 213-325-0693. C

Kittens, sealpoint Siamese, purebred male & female, $20. 213-377-2552. C

Stereo, Packard Bell, F.M. multiplex 54" walnut console w/Garrard turntable, $150. 714-892-8848. C

Cello, German-made, full size, $225. 213-430-7274. C

Encyclopedia, 16 vol. set, How To Do It, $10. 213-321-2848. C

Motorcycle, Honda 150, recently rebored, elec. start, $190. 213-325-3452. C

Camera, Retina IIIc f/2.0 lens, case, 80mm telephoto & 35mm wide angle lenses, $130. 213-670-2564. C

Home, 3-bdrm., 2 baths, near Del Amo Center, new paint, assume 5½% G.I. loan, $28,450 or lease. 213-542-4445. C

Pickup Bed, 1966 Fleetside, $100. 213-372-7860. C

Stereo Radio, Philco AM-FM, & 4-spd. record changer, 2 sep. walnut cabinets, $100. 213-677-3994. C

Aquarium, 20 gal., pump, filter, htr., wrought iron stand, $40. 714-528-2382. C

Pistol, .357 magnum Colt Trooper, Lee loader, 1.26X scope, holster & ammo., $140. 714-776-1917. C

Bicycle Built For Two, Schwinn Delux, 5-spd., $80. 805-498-3308. C

Surfboard, Yater Spoon, 9'8", $75. 213-987-1384. C

Typewriter, Smith-Corona portable, elec., 12" carriage, case, $120. 213-279-1219. C

Tires, 4, Goodyear Double Eagles, 7.75x14, recapable, $2.50 ea. 213-675-0788. C

Air Conditioner, Fedders, 7700 btu, window type, $75. 213-327-3795. C

House, 3-bdrm., 2 baths, heated pool, P.V. Pen., $42,500. 213-377-6029. C

Mag Rims, 2 14" & 2 Casler Scrambler tires, 950x14 Dunlop Elite, nylon tubeless, $100. 714-521-8309. C

Accordion, 120 bass Contello, $120. 714-522-4947. C

Ski Boat, Bristol Hull, 75 h.p. Johnson, lge. wheel trailer, many extras, $950. 213-337-6004. C

Home, 3-bdrm., 6 yrs. old, newly redecorated, many extras, $24,500. 213-375-8993. C

Miscellaneous For Sale

Sail Dinghy, 9½, dacron sails, sand dolly, cartop carrier, $150. 213-321-1655. C

House, 3-bdrm., 2-car gar., cpts., a/c, corner lot, n.w. Arkansas, $19,000. 213-242-5280. C

Motorcycle, 1968 Honda Super Hawk, 305 cc, rack incl., $550. 213-673-0859. C

Acreage, ¾ acre, 200 yds. east of Lake Los Angeles, zoned R-3, util. & roads, $8,000. 213-673-4280. C

Auto Radio, Bowman, AM 5 Pushbutton, 1968, $30. 213-327-9338. C

Motorcycle, 1966 BSA, 1,500 miles, $380. 213-675-5695. C

Pistol, Smith & Wesson M41 .22 cal. auto., $100. 213-644-3439. C

House, 3-bdrm., 2 baths, new cpts., close to Del Amo Shopping Center, $27,500. 213-325-3724. C

Acreage, 2½ acres, Antelope Valley, $42 dn., $42 mo., no int., $4,200. 213-378-1026.

Motorcycle, 1966 Yamaha Twin 100, $195. 714-523-2495. C

Postiche, black, European human hair, 3-oz., approx. 8", $15. Box 2501. C

Home, 5-bdrm., 3-car gar., central a/c, undg. util., 600 sq. ft. brick & redwd. patio, landscaped, sprinklers, fences, dps., near Northrop Ventura, $38,500. 213-889-8075. C

Surfboard, 9'10" Gordon & Smith, Mike Hynson model, $115. 213-378-4833. C

Camera, Minolta Autopak 500, elec. eye, never used, $30. 213-375-4574. C

Pups, golden retriever, 8 wks. old Dec. 20, AKC reg., all shots, 3 females, $125 ea., 3 males, $150 ea. 213-377-4018. C

Snowmobile, 1967 Polaris Colt 140, 15 h.p. 300 cc Hirth eng., trailer, $750. 714-838-7161. C

Speaker, hi-fi w/cabinet, 12" Jensen dual-cone 16 ohm, $15. 213-329-1705. C

Stereo console, hi-fi w/4-spd. changer & AM-FM radio, $75. 213-326-5731. C

Motorcycle, 1967 BSA Victor 441, $650. 213-371-1905. C

Go-Kart, 1967 Dart Chapparral Enduro, air heart d/brake, Horstman clutch, $425. 213-675-2813. C

Ping Pong Table w/net, brackets, $25. 213-372-2313. C

Camera, Polaroid Swinger, w/case, $10. 213-675-8813. C

Wanted to Buy

Ski Rack, & snow chains for 7.35x14 tires. 213-770-0504. D

Camper Jacks, for cabover camper. 213-329-1723. D

Jeep, 4-wheel drive, in good condition. 213-370-7749. D

Doll House, walk-in type, wood constructed. 213-325-7759. D

Chevrolet, 1949 through 1954. 213-378-3600.

Hat, sapphire or natural ranch mink, pillbox or other type, about 22½ or 23 size. 213-376-4787. D

Motor, electric, 110 V., 1/3 to 1.0 h.p., ball bearings preferred. 714-897-5874. D

Wall Heater, dual, vented style w/thermostatic control. 213-376-5192. D

For Trade

Mower, 4-cycle, rotary, trade for air compressor. 213-324-5449. E

Free (To Be Given Away)

Pups, ¼ cocker, ¾ terrier, b&w & black males. 714-529-6762. F

Redwood Fencing, 100' used. 213-379-1049.

Dog, sheltie miniature collie, thoroughbred female, 6 yrs. old, desires home w/children, needs enc. yard. 213-378-1486. F

Dogs, 2 beagle. 213-397-7266. F

Kittens, 3, 6 wks. old. 213-323-0184. F

Rentals Offered

Duplex, furn., 1-bdrm., carport, cpts., dps., $95 mo. 213-679-2121. G

Apt., 2-bdrm., cpts., dps., bltins, closed gar., small fenced yd., avail. Jan. 1, $125 unfurn.; $145 furn. 213-375-2091, 213-375-9397.

Condominium, 2 story, 3-bdrm., family rm., fenced patio, pool & clubhouse facilities, $230 mo. 714-531-3840. G

Apt, Hermosa Bch., need roommate, gar., $75 mo. 213-372-8196. G

Bachelor Apt, utilities incl., $75 mo. 213-679-8394. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

House, 2-bdrm., new kitchen, lge. fenced yd., gar., avail. Dec. 21, $140. 213-679-2771. G

House, 2-bdrm., bltin stove & oven, cpts., dps., new paint inside, N. Torrance, avail. after Jan. 1, $160. 213-329-0504. G

Cabins, Idyllwild, 1 & 2 bdrms., f/place, stream, patios, $20-$35 w/ends; $45-$75 wk. 213-754-5288. G

Lady wanted to share apt. in Leisure World, $75 mo. 213-374-4944. G

Apts, Anaheim area, 2-bdrm., 2 baths, sunken liv. room, a/c, elec. stoves, $150-$200. 714-776-8383. G

Apt, 3-bdrm., 2 baths, Redondo Bch., cpts., dps., bltins, gar. w/storage cabinets, $180. 213-372-8835. G

Apt, 2-bdrm., furn., cpts., dps., bltins, lge. pool, closed gar., near El Camino, adults, $170. 213-329-5986. G

Roommate wanted, to share room & bath, kitchen, living rm. & TV privileges, linens furn., approx. 1 mile from Norair, $30. mo. Box 2502. G

Rides and Riders

Rides Wanted

7 a.m. — 3:42 p.m.

Santa Monica Blvd. & 24th, Santa Monica. Mike Waters, Norair ext. 5134.

8 a.m. — 4:45 p.m.

Lakewood Blvd. & Imperial Hwy. Vicinity, Downey. D. Miyahara, Nort. Anaheim ext. 471, 213-861-4914.

Rides Offered

8 a.m. — 4:45 p.m.

Lakewood Blvd. & Imperial Hwy. Vicinity, Downey. D. Miyahara, Nort. Anaheim ext. 471, 213-861-4914.

Rentals Offered

Sleeping Room, pvt. entrance & bath, utilities pd., close to Northrop, $50 mo. 213-676-7328. G

Apt, 3-bdrm., new cpts., washer, dryer, stove, refrig., gar., $195 unfurn.; $225 furn. 213-833-2512. G

Child Care

Child Care offered, ages 2 through 5, weekly, lic. home, 10 min. from Norair & Nort. Hawthorne. 213-675-1392. I

Child Care wanted, 3½ hrs., 5 days a wk., Torrance area. 213-370-5283. I

Child Care offered, days, my home, infant welcome, hot lunch, fenced yd. 213-674-5424. I

Personals

I wish to express my sincere gratitude & appreciation to all my friends at Northrop for the flowers, cards, concern & kindness shown to myself & my family due to the sudden death of my husband, Don. MEL METCALF. L

My sincere thanks to the Northrop Recreation Club for the flowers sent during my recent illness. MISS JOHNNIE NEWMAN. L

Flying to Jackson Hole, Wyoming, Jan. 19-25, can take 3 or 4 more. 714-847-2648. L

Ironing, my home. 213-672-6060. L

My heartfelt thanks to my fellow workers for the cards, flowers & expressions of sympathy in the recent loss of our infant son. MR. & MRS. EDMOND LAVALLE. L

We wish to express our most sincere appreciation to all our wonderful friends at Northrop, during the recent loss of our husband & father. MRS. NANCY RECTOR & DAUGHTER DEBBIE. L

For Sale or Trade

Bicycle, English, 10-spd., $39 or trade for good classic guitar. 805-495-8515. M

Cabin Cruiser, 26' Chris Craft sedan, Hercules 6-cyl. eng., built in 1941, $1,250 or trade for boat on trailer. 714-968-5183. M

Falcon, 1965 Ranchero, $1,295 or trade car for 1965 Mustang. 213-532-7825. M

NEW DIVISIONS

(Continued from page 2)

response to the needs of our customers, greater technical advance and more effective management control. It is also expected to create new and better opportunities for achievement and advancement than are now available to the personnel of a single division."

Operations within Nortronics will continue as presently constituted until February 1. The divisional organization of Nortronics will be superseded by the two new divisions. Use of the Nortronics name will be discontinued.

The new Electronics Division will consist of the present Nortronics Navigation and Precision Products Departments and portions of the Northrop Systems Laboratories.

The Electro-Mechanical Division will consist of the present Nortronics Anaheim and Needham Departments, Northrop Support Operations Department and portions of the Northrop Systems Laboratories. Northrop Carolina, Inc., a wholly owned Northrop subsidiary, also will report for operating purposes to the new Electro-Mechanical Division.

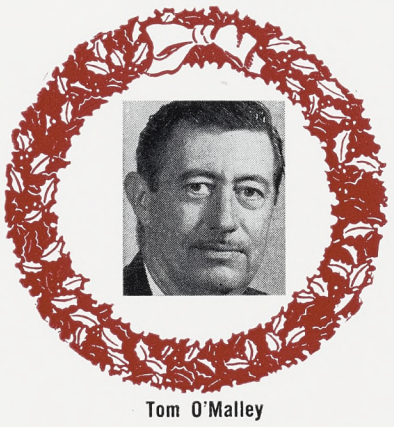
The dividing of a successful, growing organization element into two or more units is a traditional method for achieving growth at Northrop. The Nortronics Division, for instance, was created in 1957 from a portion of what is now the Norair Division. Originally Nortronics had 1,965 employees. On December 7, that division, with Northrop Carolina, Inc. added, had 6,793 employees.

Recalling Memories of Christmases Past

Willard Wade

Reverend Chambers

Irene Varo



Tom O'Malley

In Dickens' "Christmas Carol," Scrooge was haunted by ghosts of Christmases past. Northrop personnel also remember spirits of other holiday seasons, but theirs are pleasant memories.

• One is Willard Wade, Nortronics Anaheim, who insists that Christmas does not always come on December 25. In 1920, when he lived in a mountain community in Colorado, it came on January 3.

That year the winter was especially severe. The narrow gauge railroad that brought in all supplies was snowbound. Christmas came and went. When the tracks were finally cleared on January 3, everyone in town was so overjoyed they all went out on snowshoes to welcome their incoming Christmas.

• The Reverend John Chambers, Norair counselor, recalls an Eskimo feast at Point Barrow, Alaska, as his most memorable Christmas.

The menu: frozen raw whale skin and blubber, frozen raw fish, frozen raw caribou, duck soup with rice, tea and coffee.

"We had to work hard to get it down," Reverend Chambers, then pastor of three churches covering 40,000 square miles, said, "but we did and it was surprisingly good."

Kathy Glines

• The most vivid memory of Irene Varo, Palos Verdes, is of the tree she carried across Europe in a boxcar. It was the end of World War II and her family was returning to its native Hungary from Germany.

The young teenager was afraid she couldn't get a tree in Budapest. So she carried one with her across Europe. It was taller than she was, but she refused to part with it.

By the time she got to Budapest, the tree was shedding badly. The ornaments were makeshift and there were no presents to go under it. Despite that, this Christmas is brightest in her mind because of the tree she struggled so hard to have.

• Tom O'Malley, Norair transport pilot, has flown for 41 years, logging 22,000 hours and covering five million miles. He has had many memorable experiences in these years, but remembers best the Christmas he was "forced" to spend with ten pretty girls.

He was then a TWA pilot flying for the Air Transport Command in World War II. His C-54 lost an engine two hours out over the Atlantic inbound for Paris. He changed course and landed at Lisbon, Portugal.

Portugal was neutral, so plane, crew and girls were interned over the holidays before being released in January.

"We were lodged in a fine hotel and had complete freedom," he recalled. Then thinking of the girls, he added, "plus delightful company."

• The memory Kathy Glines, Navigation department, Hawthorne, cherishes most is also about a tree. When she was a child in San Francisco, she loved the brilliantly decorated tree more than the presents. So she begged her mother to leave it up until her birthday on February 6.

The tree held up pretty well and to the little girl it was just like having 40 days of Christmas.

• The holiday season that Karen Burce, Norair Hawthorne, remembers most is the one she had to borrow from her mother.

Karen had planned a big dinner for 16 guests. Suddenly her house filled with smoke. A cigarette dropped behind a couch had caused a fire.

Her husband grabbed the first liquid he could find. It was the pot she was boiling giblets in for her dinner.

The fire was extinguished before it did major damage, but the house was a mess and her dinner ruined. Frantic, she called her mother.

"I have 16 guests, no dinner, no house!" she wailed into the phone.

After her mother got over the initial shock, she came through and donated her own dinner and house for Karen's party.

• Dorothy Peringer, Nortronics Anaheim, remembers most the saddest Christmas of her life. She was awakened Christmas night by a noise downstairs. She rushed to the stairs, sure she would at last see Santa Claus.

All she saw was her father and mother putting presents on the tree. She rushed to the window. There was no sled or reindeer outside either. The little girl realized then that Santa was a myth. She cried softly.

The next day the tree was as gay and the presents as nice, but something was missing: a jolly fat man in a red suit. Christmas would never again be the same.

• From Johnnie Via, Northrop Ventura, comes recollection of a heart-warming Christmas for children of his enemies. It was 1944 and he was in the Seabee hospital on Saipan. There were 100 Japanese children in the prisoner of war camp there. The Seabees decided they should have a Christmas.

They made a makeshift Santa suit from a mattress cover dyed red with wild berry juice. This, plus a beard made of cotton from the dispensary, fitted out a Santa Claus.

Karen Burce

Then Johnnie and other members of his battalion donated presents and candy from home to make the party complete.

Johnnie was too ill to go to the party himself, but he watched it from his quonset hut hospital window. In the distance the sounds of war reminded him that there was little "goodwill toward men" that day, but in the mess tent there was plenty goodwill toward children.

• The most vivid memory of Millie and Leo Guolo, is of a holiday they spent "190 years ago." The two Anaheim employees with their daughters arrived in Williamsburg, Virginia, during the holiday season. The historic town has been restored as it was in the 1770's.

"We took part in the traditional colonial candlelighting," Millie recalled. "Each of us carried a lighted candle as a drummer boy and fife player led us through the dark street."

As they passed each house, candles were lighted in the windows and the residents, in colonial costume, joined the procession. The parade of flickering lights ended at the mansion once occupied by the English governor.

"With the old time dresses in the candlelight, we felt like we had gone back in time to the days of young George Washington.

"Now when I read about colonial times," Millie said, "the characters aren't just names in a book. I feel I know them and that we shared a Christmas '190 years ago!' "

• The most memorable Christmas "so far" of Reiji Matsui, Northrop Ventura, was the time he had four Christmases with three different sets of relatives in four different cities in three climates, in 26 hours.

When Reiji left Tokyo to join his family in America after an 11 year separation, friends and relatives came out in the snow to give him a sayonara party at the airport.

It was still Christmas Eve, courtesy of the International Date Line, when he arrived in Honolulu. Here relatives whisked him off to a Christmas swimming party at Waikiki Beach.

Christmas morning he was welcomed to San Francisco by fog and rain.

It was still Christmas Day when he landed a few hours later in Los Angeles' sun to be welcomed by his mother and brother.

While this was truly a memorable occasion, he insists that it is only the most memorable "so far." The reason for this is that he will be married this Christmas Eve and will fly off Christmas Day to Hilo, Hawaii, for his honeymoon.

"And *that*," he said with conviction, "will be the most memorable!"

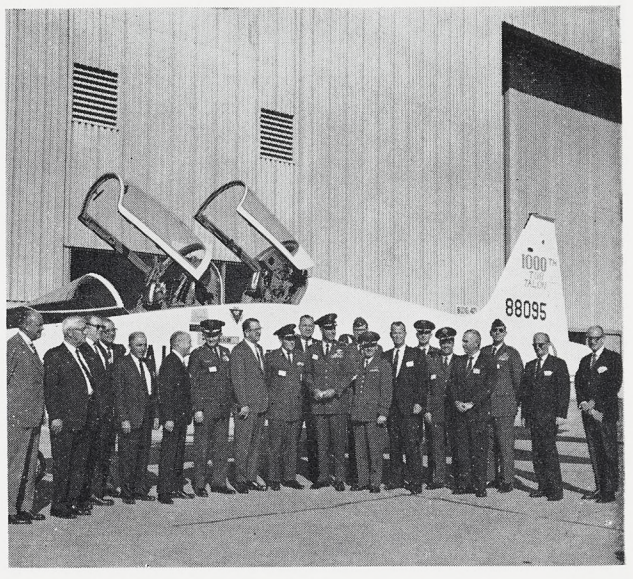
Dorothy Peringer

Johnnie Via

Millie Guolo

Reiji Matsui

NORTHROP DELIVERS 1,000th T-38 TO AF



HISTORIC OCCASION—Ceremonies at Palmdale last week marked delivery of the 1,000th Northrop T-38 supersonic trainer to the USAF's Air Training Command. Delivery ceremony, left, finds R. R. Nolan, senior vice president—Manufacturing and Administration, accepting symbolic payment check from Major General D. E. Riley, commander, AF Contract Management Division, as Lt. General Sam Maddux, jr., commander, USAF ATC, and F. W. Lloyd, vice president and Norair general manager, look on. A part of the crowd, center, attending the event listens to remarks by Mr. Nolan. Top military, civilian and company officials on hand for the occasion pose before the 1,000th T-38, right. Following ceremonies, aircraft was flown to Randolph AFB, Texas, where welcoming ceremonies were held.

NORTHROP NEWS

NORTRONICS EDITION

Northrop Corporation, Beverly Hills, California Vol. 26, No. 26 January 15, 1969

Three Divisions Recognized For Program Contributions

The 1,000th T-38 Talon supersonic trainer was delivered to the U.S. Air Force at a special ceremony at Palmdale on January 7.

The milestone Talon was officially turned over to Major General D. E. Riley, commander, Air Force Contract Management Division, by Richard R. Nolan, senior vice president, Manufacturing and Administration. General Riley certified the airplane and in turn presented it to Lt. General Sam Maddux, jr., commander, USAF Air Training Command.

General Riley commended Northrop's workmanship and said that "the long production run of the T-38 is an undeniable tribute to its excellence of design and efficiency of its production."

In accepting the milestone aircraft for the Training Command, General Maddux called production of the T-38 "a great achievement by an American industry-military team." He said that the Northrop trainer has established a splendid record in the Training Command over the past seven years where it has flown nearly two million hours in training more than 11,000 student pilots.

While the primary responsibility of the Norair Division, both Northrop's Nortronics department at Anaheim and the Ventura Division share in the building of the supersonic trainer.

Nortronics Anaheim supports the T-38 with a variety of assemblies including ailerons, throttle controls, rudders, control sticks, diverter valves and speed brakes.

In delivering the 1,000th Talon to the Air Force, Mr. Nolan called the event "a milestone of major importance in Northrop history.

"In designing and developing the T-38, Northrop and the Air Force had a common purpose—to build a trainer that would enable student pilots to acquire the

(See T-38, page 6)

BIG TIME FOR OLD TIMERS

Quarter Century Club Installs Eight

Eight new members were received into the Nortronics Quarter Century Club at the Third Annual Recognition Dinner held at Alfred Restaurant, Long Beach, November 26.

The ceremonies also included recognition of the contributions of all Nortronics "old timers" by Vice President and Nortronics General Manager Frederick Stevens, and election of the club's 1969 slate of officers.

The eight new members were:

Amos Adams, jr., now an engineering technical assistant who joined the company as a bench machinist in 1943.

William Coughlin who joined Northrop as a receiving clerk and who is now a Control Clerk special leader.

Newt Cook, now with Mockup and Tool Building, NSL, who began in Assembly General as a group leader.

Russell Rhea of Support Requirements and Analysis who began work here as a control booth operator.

Marion Hodges, originally a typist, is now a senior administrative secretary, at Palos Verdes.

Irene Pelot started as a stock clerk "B" in 1943 and is now Material Project coordinator at Palos Verdes.

Louis Prumers, a native of South Africa, joined Northrop 25 years ago as an installer electrical "B."

The eighth member, Carl Engstrand, was on leave of absence and was not present for the installation ceremony. He is assigned to Manufacturing at Nortronics Hawthorne.

In presenting diamond service pins and welcoming the new members to the exclusive 52-member veterans club, Mr. Stevens called the Quarter Century employees "special people who made Northrop what it is."

The Nortronics general manager went on to discuss the present position of the company and its five-year growth plan. He predicted continued growth and told the veterans that "business prospects are better than ever before."

Elmer Noonan, director of Industrial Relations, also spoke briefly. He told the Quarter Century members: "We look to you to provide guidance to our new people."

Following the recognition ceremony for the new members, officers were elected for the coming year. Chester Duliner, jr., is the new president. Donald Hannum was elected vice president, and Stella Murray is the new secretary.

Kirk Hunt, outgoing president, was master of ceremonies for the 1968 recognition dinner.

NEW MEMBERS OF the Quarter Century Club with their spouses meet with Fred Stevens (center) before the annual installation banquet.

Product Areas Defined for Two New Northrop Divisions

Product areas have been assigned to the new divisions created by separation of Northrop Nortronics into the Northrop Electronics Division and the Northrop Electro-Mechanical Division, according to Frederick Stevens, vice-president and general manager, Nortronics.

The Northrop Electronics Division will include: Navigation and Guidance, Computers, Space Systems, Avionics, Command and Control Systems, Intelligence Systems, Electronic Warfare Systems, Information Systems, and Precision Products.

Under Northrop Electro-Mechanical Division will be Automation Systems, Electro-Optical, Ordnance, Tactical Systems, Ocean Systems, Fabricated Products and Textile Machinery, Support Operations, Chemicals and Propulsion.

Divisional headquarters for Electronics Division will be at Research Park, Palos Verdes, while Electro-Mechanical Division will be located at Anaheim.

The new divisions will be composed of the existing Nortronics personnel and will use existing facilities.

"As a result of the inter-relationship of activities to existing facilities," Mr. Stevens said, "joint use of facilities will be required.

"Under these conditions, one division will be established as the host division. The other will be a tenant receiving basic services from the host. No major moves or new facilities are anticipated as a result of this reorganization."

The reorganization will become effective February 1.

TWO EXECUTIVES ATTEND INSTITUTE

Two Nortronics executives are attending the Managerial Policy Institute in USC's School of Business Administration.

They are William C. Armstrong, director, Space Systems section, Nortronics Hawthorne, and R. L. Gibney, director, Administration and Control, Nortronics Anaheim.

More than 60 senior executives from 40 businesses in 47 communities in Southern California are enrolled in the Institute. Primary objective of the Institute is the broadening of the executive's understanding in order that he may provide the responsible leadership required in a changing business environment.

Kaufold Speaks To Navigation Dept. Personnel

Roy Kaufold, recently appointed vice president and manager of Northrop's Nortronics Navigation Department, spoke to all department personnel on Friday, December 20.

Plans for an open air meeting were cancelled due to bad weather and personnel heard Mr. Kaufold over the loud speaker system. He spoke twice, once in the morning to the day shift and again in the afternoon to reach second shift personnel.

In his address Mr. Kaufold reviewed accomplishments of the Navigation Department and status of current programs, mentioning that the C-5 navigation system had met and exceeded performance specifications.

Looking to the future, he told employees that the over-all business outlook indicated expansion. He predicted an increase in new contracts and continued growth through 1974.

Speaking of the division of Nortronics into two new operating organizations, Mr. Kaufold told Navigation Department personnel that the new structure would pro-

(See KAUFOLD, page 6)

NORTHROP NEWSMAKERS

Tak Yamashita, director of Programming, NDP, will be a discussion leader at the American Management Association's Administrative Services Division Workshop Seminar, "Advanced Management of Computer Programming," which meets February 12-14 at the Ambassador Hotel, Los Angeles.

* * *

H. Jack Behrens, Norair, has authored a chapter for a text on Cost Engineering scheduled for publication by McGraw-Hill.

* * *

Floyd Parker, Norair, has been appointed assistant district commissioner, Boy Scouts of America, Crescent Bay Area Council. In this executive level adult volunteer leadership position, Mr. Parker will coordinate the administration, operations, and training programs for 19 Cub Scout packs that serve 900 boys in the Culver City-Palms district. Mr. Parker also recently received a Distinguished Adult Leadership Award for outstanding service to Scouting in 1967-68.

* * *

Fred K. Oshiro, Norair, has presented a paper on "Calculation of Radar Cross Section" before the Anti-Ballistic Re-Entry System Meeting held at San Bernardino.

* * *

Joe Der, jr., senior technical specialist, Aerodynamics and Propulsion, Norair, will present "A Study of General Three-Dimensional Boundary Layer Problems by an Exact Numerical Method" to the AIAA 7th Aerospace Sciences Meeting in New York on January 20-22.

* * *

Thomas E. Flannigan, Ventura, has graduated from the 54th session of the Advanced Management Program of the Harvard University Graduate School of Business Administration.

The graduating class was composed of 160 men, including executives from 140 companies in the United States and abroad, and 20 military officers and men from other government agencies.

* * *

William M. Waldon, Corporate office, will be a discussion leader for the American Management Association's workshop seminar on "Modernizing the Group Insurance Plan." The seminar will be held at AMA headquarters in New York City on February 5-7.

* * *

R. E. Herfert, Norair, has made an oral presentation on "Scanning Electron Fractography" before a local meeting of the Electron Microscope Society of America.

* * *

Stanley R. Murnane, Norair, presented a technical briefing on Norair design of 747 fuselage structure to 25 members of the senior class, Aeronautical Department University of Minnesota, on December 2.

15th Annual Tournament Attracts 183 Bowlers

The Northrop 15th Annual Christmas Bowling Tournament drew 183 entrants who won 34 trophies and $183 in prize monies.

The tournament, held at the Tropicana Lanes, Inglewood, on December 28 and 29, featured mixed doubles, men's and women's doubles, and men's and women's singles. Commissioners were Elva Heald and Frank Howard, Norair, and Dorothy Baldwin, Nortronics.

Events, winners and scores were:

Men's Singles A (14 entries): Ben Brittingham, Norair, 640; Vito De Paul, Nortronics, 599, and Jack Woods, Norair, 577.

Men's Singles B (27 entries): Rich Houser, 641; Vita Ripa, 618; Tony Collins, 608; and Dick Jeffries, 601. All were from Norair.

Women's Singles A (14 entries): Elsie Surtees, Norair-Family, 601; Dona Smith, Nortronics-Family, 598; Marge Hinzo, Norair-Family, 596.

Women's Singles B (6 entries): Iris Collins, Norair-Family, and Elva Heald, Norair, tied with 557.

Men's Doubles A (20 entries): Sam Greco and Vita Ripa, Norair, 1,195; Jerry Alexander, Norair, and Art Muensterman, League, 1,170; and Bill Myerson, Norair, 1,135.

Men's Doubles B (14 entries): Vito De Paul and James Melatti, Nortronics, 1,231; Roger Hinzo, Norair, and Ron Hinzo, Norair-Family, 1,210.

Women's Doubles Open (26 entries): Corinne Davis, Norair, Mary Sherrick, Norair-Family, 1,156; Laura Kotal, League, Elsie Surtees, Norair-Family, 1,141; Connie Hinzo and Marge Hinzo, Norair-Family, 1,124.

Mixed Doubles A (44 entries): Flo Grant, Ron Beye, Nortronics, 1,185; Dorothy Baldwin, Nortronics, Frank Howard, Norair, 1,165; Vito De Paul, Nortronics, Dona Smith, Nortronics-Family, 1,155; Janet Masterson, John Masterson, Norair-Family, 1,152.

Mixed Doubles B (18 entries): Barbara Day, Norair-Family, Jim Day, Norair, 1,206; Elva Heald and Frank Howard, Norair, 1,176.

In addition 17 trophies were given for special awards. They were: **High Scratch Series:** Men A, Vito De Paul, Nortronics, 610; Men B, Ben Tabon, Norair-Family, 594; Women A, Corinne Davis (210 game), Norair, 551; Women B, Dorothy Baldwin (209) game, Nortronics, 468.

High Handicap Series: Men A, Frank Howard, Norair, 632; Men B, Drex Carlson, Nortronics, 620; Women A, Laura Kotal, League, 624; Women B, Iris Collins, Norair-Family, 605.

High Scratch Game: Men A, Jerry Alexander, Norair, 234; Men B, Art Muensterman, League, 235; Women A, Corinne Davis, Norair, 205; Women B, Dorothy Baldwin, Norair, 179.

High Handicap Game: Men A, Vito De Paul, Nortronics, 233; Men B, John Masterson, Norair-Family, 253; Women A, Marge Hinzo, Norair-Family, and Bettie Rupp, Norair, tied with 217; Women B, Connie Hinzo, Norair-Family, 213.

Champion of Sandbaggers (most pins over entering average) went to James Melatti, Men, Nortronics plus 141 pins; and Women, Iris Collins, Norair-Family, plus 119 pins.

Boeing Seeks OK for SST Prototypes

The Boeing Company is ready to proceed immediately to construct two U.S. Supersonic Transport prototypes pending approval of the company's new SST design, T. A. Wilson, Boeing president announced.

Government and airline officials have begun final evaluation of the new Boeing design following successful completion of preparatory work by the company. A final summary document on the design was to be submitted to the FAA this month.

Preliminary Boeing recommendations call for Norair to build a forward section of the body.

"We are confident," Mr. Wilson said, "that the design will provide a sound foundation for an economically successful commercial SST."

U.S. SST prototypes will be 280-feet long, 50-feet tall at the tail and have a 141-foot 8-inch wingspan with the leading edge of the wing swept back 50 degrees. The titanium aircraft will weigh 635,000 pounds fully loaded. It will cruise at altitudes above 60,000 feet at speeds of about 1,800 miles per hour.

The airplanes will operate from existing international airports at takeoff and landing speeds similar to those of existing subsonic jetliners. They operate efficiently at subsonic speed. This will enable them to take off at inland airports, fly to the coast subsonically, then accelerate to supersonic speeds for transocean operation.

A production decision has not been made, Mr. Wilson said, but U.S. SST's could enter airline service as early as 1976. To date, 26 of the world's airlines have reserved delivery positions for 122 U.S. SST's.

IS IT NEWS?
CALL EXT. 4273
HAWTHORNE

THERE ARE DATES and dates, but here are the best ones of all, according to Nancy Clary, clerk in Finance at Nortronics Palos Verdes. They are February 11 through 13 for those are the dates for WINCON '69, the 1969 Winter Convention on Aerospace and Electronics Systems. WINCON is the West Coast's largest and most important gathering of electronics engineers.

Blue Ribbon Group Heads 1969 WINCON Meeting

Two university presidents, a congressman, the FAA administrator, leading scientists and top military commanders will head technical sessions at the 1969 National Winter Convention on Aerospace and Electronics Systems (WINCON).

The blue ribbon forum, to be held February 11 to 13 at the Biltmore Hotel, Los Angeles, is sponsored by the Aerospace and Electronics Systems Group, and the Los Angeles Council of the Institute of Electrical and Electronics Engineers.

Eight unclassified sessions plus the traditional von Neumann lecture series which features "Our Changing World" have been scheduled for the conference, according to Frederick Stevens, Nortronics general manager, general chairman of WINCON '69.

The SAMSO Winter Convention, a series of classified presentations, will be held concurrently at the Navy and Marine Corps Training Center, Chavez Ravine.

WINCON technical program chairman Dr. G. Dale Bagley of TRW, said, the unclassified sessions will follow the conference theme "Electronics—Key to the 70's." They will cover vital areas of communication, air traffic control, medical electronics, future satellites, and vehicle traffic control.

Still's Book Explores Next Thirty Years

Henry Still, a member of the Corporate Public Relations staff, has authored a new book titled "Man: The Next Thirty Years."

Published this month by Hawthorn Books, Inc. of New York, the new book predicts future developments in many areas ranging from food to the exploration of outer space.

Sections of the book dealing with communications and transportation take note of Northrop Corporation's emphasis upon worldwide communications and the company's involvement in the Boeing 747 and other future air transport programs.

Mr. Still, who has been with Northrop for nearly six years, has written three other books. They are "To Ride the Wind" (a biography of aviation pioneer Glenn L. Martin); "Will the Human Race Survive," and "The Dirty Animal".

Falcons Trim Munsters to Win Football Crown

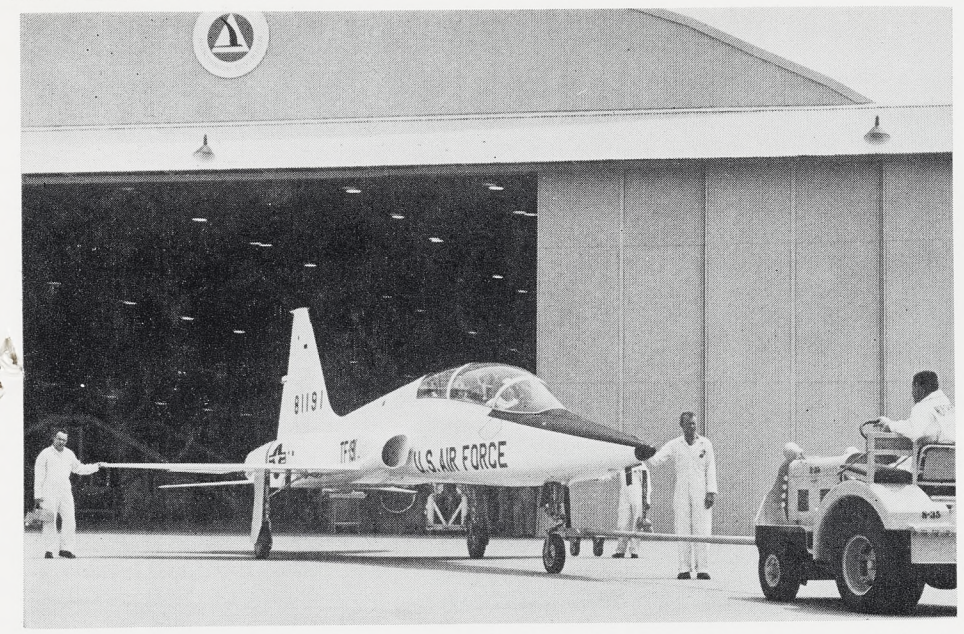
The Norair Falcons have been crowned plant champions of the Norair Nortronics flag football program following a playoff victory over the Munsters, also of Norair.

The Falcons won their Thursday league. The Munsters, plant champions for the past five seasons as well as Los Angeles County champs for five years, won the Saturday league.

In the playoff victory the Falcons scored a 14-8 victory.

Making up the Falcon team, under Coach Mack McConnell, are Martin Turner, Cris Elofson, Carl Hunter, Rocky Huish, Ron Fisher, Blanchard Davis, Cleve Simington, Bob Fox, Gary Currington, Guy Little, Bud Ebersold, Mel Overton, Loren Guinn, Gary Lottman and J. Lackey.

SPEEDY DIAMOND—Northrop F-5 tactical fighters flown by pilots of the Republic of Korea Air Force aerobatic team go through an intricate maneuver as part of their crowd-pleasing routine. They were participating in Korea's Armed Forces Day before a crowd of about 500,000 near Seoul. Pacific Stars and Stripes photo.



AT THE BEGINNING—Prototype of the first Northrop T-38 rolls out of final assembly, left above, on August 15, 1958. First flight followed on April 19, 1959 at Edwards AFB. Design concepts of the T-38, highlighted in this overhead shot of an early model, right above, were so sound that no basic configuration changes were required after completion of preliminary design.

Talon Flies Two Million Hours, Trains 11,000 Pilots in 7 Years

Delivery of the 1,000th T-38 Talon supersonic trainer to the Air Force last week is the latest in the milestones that have marked the career of a remarkable airplane that has flown nearly two million hours and trained nearly 11,000 pilots.

The Talon was officially born 14 years ago when Northrop performed design studies in the spring of 1955 for a lightweight supersonic airplane that would combine simplicity, utility, maintainability and safety.

Then in November 1955, specific design studies for an Air Force supersonic jet trainer were initiated. These studies resulted in June 1956 in a contract to build the T-38, a Northrop-designed basic trainer.

The first of two prototype aircraft was rolled out on August 15, 1958. The design concept was so sound that no basic configuration changes were required after completion of preliminary design. All airframe subsystems have exceeded the reliability standards originally set by the Air Force.

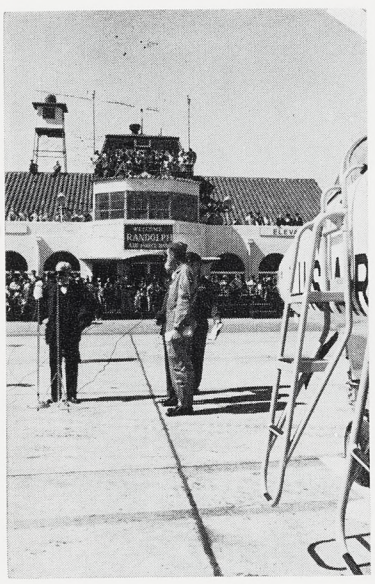
Northrop test pilot Lew Nelson made the first T-38 flight at Edwards AFB on April 19, 1959. Tests proceeded so well that the 100th test flight milestone was reached in less than six months.

Other milestones quickly followed. In 1961 famed aviatrix Jacqueline Cochran established eight world records in the T-38. Then in February 1962, Air Force Major Walter Daniel set four world time-to-climb records.

When Category III tests were concluded in November 1962, the Talon had logged 8,588 hours and the T-38 became the first supersonic jet in Air Force history to complete all flight tests without a major accident. This record is still unequalled.

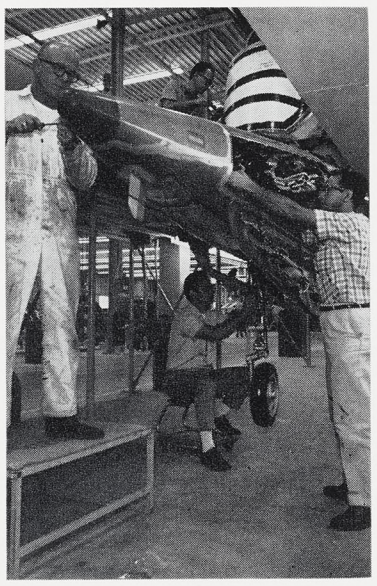
The T-38 was introduced into the Air Force inventory at Randolph AFB in March 1961. As of December 1968, a total of 877 were in operational use at Air Force training bases. Strategic Air Command, the Aerospace Research Pilot School, NASA and others also use T-38's for specialized missions.

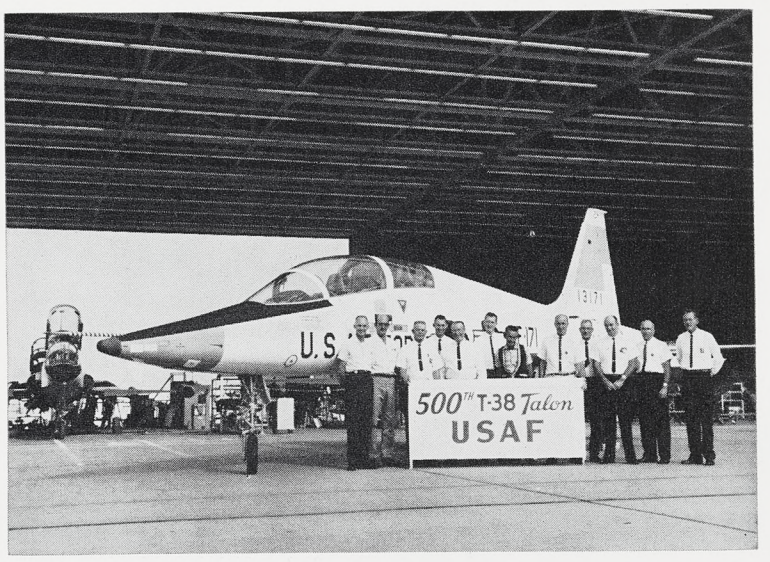
Delivery of the 1,000th T-38 in January 1969 climaxes a decade of production, but the T-38 story is still being written. With production programmed through 1970, the T-38 will continue to serve the Air Force with safety and economy in its undergraduate pilot training role.

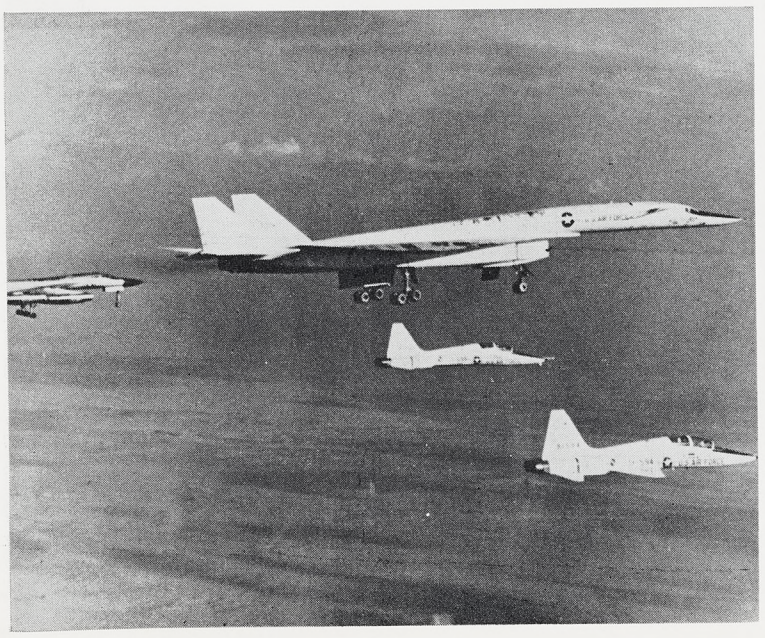


CEREMONIES at Randolph AFB, above, highlighted delivery of first operational T-38 to the Air Force in March 1961. Major General Benjamin Foulis, USA-retired, who learned to fly with the Wright Brothers, speaks to we'coming crowd.

LEW NELSON, Norair director of Flight Operations, above, climbs into the cockpit of the first T-38 for its initial flight test. Mr. Nelson subsequently conducted the first flight test of the 500th and the 1,000th T-38's.







SKILLED CRAFTSMEN like those above from Norair, Nortronics and Ventura Divisions share much of the T-38's success with the capable designers who created it. Formations of T-38, upper left, on routine training missions are familiar sight across the United States. The T-38 also serves, lower left, as a "pace plane" for the XB-70. Symbolic T-38 milestones include, right above, rollout of the 500th T-38 at Palmdale and, lower right, the delivery flight of the 1,000th aircraft shown breaking ground enroute to Randolph AFB following ceremonies last week.

WHAT DO YOU THINK?

What Was The Best Thing That Happened To You During 1968

Mrs. Miller

Peggy Miller, Correspondence Control coordinator, Ventura:

The visit to Canada over the Labor Day holiday was the highlight of my year. I flew to Kitchener, Ontario, to attend the wedding of my niece. While there, I saw relatives that I hadn't seen since my own wedding 19 years before.

Mrs. Busch

Mary Busch, Planning clerk, Norair:

One of the best things that happened to me in 1968 was last January when I hired in at Norair. I'm very thankful for all those that make my working here so enjoyable. When you have a job you're happy with and pleasant working associates it makes many good things happen throughout the year.

Mr. Ranill

Nick Ranill, Materials Estimating, Nortronics Anaheim:

It was the way Nortronics people responded to my call to aid Don Buchanan, a high school senior paralyzed in a surfing accident two summers ago. Although Don can only move his head and arms slightly, he completed high school. Nortronics people are donating money to buy him a hydraulic lift like the one used by Raymond Burr in the TV program "Ironsides," so he can get in and out of his family's van.

Mr. Lyle

Lowell Lyle, Procurement, Ventura:

When my son returned from Vietnam last February, that was the best thing that could have happened to me and my wife in 1968. Since he is our only son, there was nothing more important to us than having him return safely. So, the best of 1968 came quite early at our house.

Mrs. Dennis

Mary Dennis, mail clerk, Mariposa:

The best thing that happened to me last year was the relaxing five days I spent with my husband, Rudy, in Palm Springs on the Memorial Day weekend. It was a simple holiday. Just sun and fun, but we both loved it more than anything else that happened all year.

Mrs. Prather

Patsy Prather, Assembly C-5, Nortronics Hawthorne.

The most wonderful thing I can think of is having all my family with me at Thanksgiving and again at Christmas. We had not had a reunion like this since 1963. There were 16 of us altogether, including my four sisters.

Credit Union Dividend Listed at 6.25 Percent

A dividend of 6¼ per cent was declared by the board of directors, Northrop Credit Union, at its December 18 meeting, according to Mary Delaney, secretary-treasurer.

The dividends are based upon the Credit Union's 1968 earnings, and were posted to shareholders' accounts January 1, 1969. They will thus become part of the shareholders' 1969 income.

The Credit Union's 1967 earnings paid as dividends in 1968 should be included in 1968 tax returns. To assist members in filing tax returns, the end-of-the-year statements to be mailed in mid-January have yearly figures for computing taxes.

"Dividends paid in 1968 (based on 1967 earnings) are recorded in the lower left of the statements," Mrs. Delaney said. "In the lower right of the statement we have recorded the total interest paid by the member on any 1968 loans."

The Credit Union's annual shareholders' meeting is scheduled for 5 p.m., February 4, at the Norair cafeteria.

CHALK TO LECTURE ON MANAGEMENT

David Chalk, administrator, Management Development, has been appointed lecturer in Aerospace Management, Institute of Management and Safety, Graduate School, University of Southern California.

He will teach a course, ASM 544, Advanced Principles of Aerospace Management, beginning with the 1969 spring semester.

COMMANDER ABEL

Robert W. Abel Commands USN Air Reserve Unit

During the week Robert W. Abel supervises Contract Estimating at Nortronics Palos Verdes, but on weekends he turns flying sailor to command a U.S. Navy anti-submarine patrol squadron at Los Alamitos Naval Air Station.

A Navy pilot in World War II, Commander Abel left the military service in 1950, but retained his commission in the Naval Air Reserves. He flew fighters and attack planes for his reserve training until three years ago when he switched to anti-submarine patrol duty.

He now commands a squadron of 92 enlisted men and 22 officers who, like himself, spend their weekends maintaining flying proficiency so they will be able to serve with the regular U.S. Navy in a national mobilization.

As part of his duties, Commander Abel flies a Grumman S2E radar tracker plane. The plane carries a crew of four. The commander flies regular patrol missions for the Navy along the California coast on his weekend tours, searching for unauthorized submarine penetration of American waters.

Commander Abel said he still has a few openings for reservists in his squadron. "Any former Navy men at Northrop who might be interested in joining up with us will be welcome," he said.

Northrop Page Finishes Work On EUCOM Center

A Northrop subsidiary, Page Communications Engineers, Inc., has completed engineering, fabrication and installation of six communications and electronics subsystems for the European Command Center at Stuttgart, Germany.

This center has under one roof the capabilities needed to monitor and control U.S. Forces in Europe.

Northrop Page's work included electronics equipment for teletype and data, record and playback, secure voice, graphics and briefing, sound amplification and distribution and display.

Work began in 1967. Parts of the center became operational in July 1968 and the total facility was activated in late 1968.

BENTLEY ELECTED

Ed Bentley, president, will head Northrop Coin Club activities in the Hawthorne area for the coming year following annual elections held recently.

Other officers are: Don Marousek, vice president; Lou Doxtator, secretary; Dave Trimble, treasurer; and Bob Carstens, sergeant-at-arms.

Norair Engineer Ed Long Doubles as TV 'Bad Guy'

To the rest of the *Gunsmoke* TV audience he was a mean-looking hombre with a four-day beard out to do in Matt Dillon, but to Norcrafters viewing the show he was Ed Long, a Proposal Engineering specialist in Norair's Research and Subcontract Proposals branch.

Ed is no novice to the TV scene. In addition to *Gunsmoke*, he has appeared in *Rawhide, Bonanza, Daniel Boone*, and the *Guns of Will Sonnett*.

While casting directors like to give him "bad guy" roles, he is equally smooth in action series. He has taped shows for *Mannix, The Fugitive, Judd for the Defense*, and *The Lieutenant*. He also has credits in imaginative series like *Batman, The Invaders* and *Star Trek*.

In addition to his TV work, he has taught, directed and acted in a rich repertoire of classical and modern drama. He recently had a leading role in the Theater 40 Classical Repertoire Group's production of Ben Jonson's *Volpone*, and Casca in last season's *Julius Caesar*.

He can also lay claim to five "Best Actor" awards for work with Little Theater and collegiate sets. These were such roles as the king in "The King and I," Kowalski in "A Street Car Named Desire," Tajamaru in "Rashomon," and Iago in "Othello."

When Ed isn't acting, he lends his talented hand to directing. He is a familiar face in many of the leading playhouses, workshops, and community theatres around the Los Angeles area.

Mr. Long received his dramatic training at UCLA where he received a master's degree in communication arts. He also has taught acting, writing and speech courses at both UCLA and Los Angeles City College.

A Norcrafter for 11 years, he has addressed the Northrop Toastmasters Club on such subjects as acting, public speaking, and speech dynamics. He also has conducted seminars on effective presentations for engineering and scientific personnel here.

ED LONG

Much-Traveled Williams Trio 'Settles' at Norair

A new Norair employee is the third member of her family to join Northrop. She has done so after traveling in 49 states and nine foreign countries and studying in 13 schools from Africa to El Camino in 14 years.

She's Deemma Sue Williams, a Quality Analysis clerk at the Mariposa facility, daughter of Bill Williams, Norair Manufacturing Control coordinator, and sister of Joe Williams, Norair aircraft assemblyman.

Deemma has taken the traveling in stride and has "enjoyed every move" made by her family during the Air Force career of her father.

Deemma and brother Joe—who's just back from service in Vietnam—were both born in Hawaii but consider Texas their home since they lived a full four years at San Antonio. That's as long as Deemma ever spent in any one place.

Some of her fondest memories are of Clark AFB in the Philippines where she learned hula dancing. There she performed in hospitals and Air Force variety shows. Also, since she was three, Deemma has participated in water ballet and has done solo work in synchronized swimming.

The travel which was most like a vacation began when Deemma was seven years old.

Deemma received her associate of arts degree from El Camino College in Torrance last August and plans to be married next summer.

Then, it would seem, she could finally settle down to live in one place without ever traveling again if she wished.

But, alas, Deemma's fiance is a young man who plans a career in—you guessed it—the U.S. Air Force.

DEEMMA SUE, JOE AND BILL WILLIAMS

Classified

Classified ad service is provided free of charge to all Northrop personnel. Ads for agencies, commercial enterprises and private businesses are not accepted. The Northrop News reserves the right to edit or omit ads. Obtain ad form C67 from organization clerk and mail ad to Northrop News, 170, zone 62. Ads are limited to one item and one ad per person each issue. Deadline is noon Wednesday, one week before publication.

Automobiles For Sale

Arbath Zagato, 1961, 750 cc, $750. 213-677-1681. A

Pickup, 1958 Ford, ½ ton, new eng. & trans., $650. 213-542-2098. A

Rambler, 1959, $175. 213-377-8609. A

Ford, 1956, 2-dr., $150. 213-542-2537. A

Volkswagen, 1968, $1,850. 213-671-0835. A

Truck, 1960 Chevrolet, 6 cyl., a/c, radio, 2 tanks, long bed, $700. 213-325-1571. A

Corvette, Stingray fastback, 327/365 h.p., air, posi-trac., AM-FM radio, $2,995. 213-831-4586. A

Ford, 1969 Econoline van, 302 cu. in., V-8, $2,700. 213-372-2772. A

Ford, 1963 XL-500, 390 V-8, Cruise-O-Matic, p/s, p/b, AM-FM radio, $1,050. 213-677-6375. A

Chevrolet, 1961 Biscayne, 4-dr., std. shift, $400. 213-545-4741. A

Camaro, 1967 S.S. 396, r/h, p/s, p/b, $2,100. 213-545-1843. A

Station Wagon, 1957 Chevrolet, many extras, 283 eng., $795. 714-645-2799. A

Ford, 1959 Galaxie, 2-dr., h/top, r/h, p/b, p/s, a/c, $350. 213-430-5027. A

Cadillac, 1955 60S, full power, $200. 213-387-9767. A

Chevrolet, 1962 Impala, p/s, p/b, r/h, $350. 213-770-1023. A

Corvette, 327/350 h.p., 4-spd., stereo tape, $1,500. 213-532-9179. A

Chevrolet, 1965 Impala S.S., V-8, auto. trans., p/s, r/h, $1,495. 714-826-2209. A

Grand Prix, 1964, 4-spd. trans., AM-FM radio, 421 h.p., tri-power, posi. trac., p/b, $1,000. 213-294-6806. A

Porsche, 1961 S-90 convt., AM-FM, $2,450. 213-782-6869. A

Porsche, 1959, luggage rack, radio, $1,795. 213-324-9373. A

Mercury, 1964, Park Lane, 2-dr., h/top, 390 V-8, fastback, full power, a/c, $1,000. 213-672-2407. A

Falcon, 1962 Ranchero, 6-cyl., std. trans., r/h, $700. 714-847-9704. A

Ford, 1967 Galaxie 2-dr. h/top, p/s, a/c, $2,300. 213-834-0309. A

Volkswagen, 1966, VW air, $1,450. 213-378-7479. A

Cadillac, 1961 De Ville, 4-dr., fully equipped, $850. 213-377-2158. A

Station Wagon, 1959 Chevrolet, a/c, auto., r/h, $295. 213-672-7683. A

Truck, 1966 Ford, ¾-ton, custom cab, f/glass camper shell, $1,500. 714-527-4554. A

MGA, 1957, $370. 213-545-3495. A

T-Bird, 1955, $1,650. 213-379-1031. A

Volkswagen, 1957, $300. 213-547-2716. A

Ford, 1959 Galaxie, new tires, $350. 213-363-3843. A

Chevrolet, 1967, custom El Camino, fac. air, p/s, $2,450. 213-329-6622, 213-323-9398. A

Chevrolet, 1957, 409 cu. in., many extras, $500. 213-379-3138. A

Pontiac, 1965 GTO, p/s, p/b, fact. air, auto. trans., $1,500. 213-644-7508. A

Ford, 1954, V-8, auto. trans., r/h, $150. 213-457-7086 or Box 2601. A

Pontiac, 1962, 4-spd., 2 4 bbl. Holly carbs, $900. Box 2602. A

Pickup Truck, Chev., w/Open Road camper, 8 ply tires, fully equipped, $1,900. 213-376-7569. A

Volkswagen, 1967 1600 Fastback, sliding roof, AM-FM radio, $1,600. 213-386-0455. A

Buick, 1966 Riviera, a/c, full power, $2,900. 213-675-5329. A

Volkswagen, 1967, $1,500. 213-927-8972. A

Rambler, 1961 American, stick shift, r/h, $200. 213-375-6773. A

Chevrolet, 1962 Impala S.S. h/top, reblt. 327 eng., $650. 213-326-7561. A

Volkswagen, 1962, has new fact. reblt. eng., $375. 213-347-6964. A

Dune Buggy, V.W., many extras, $1,250. 213-371-1175. A

Volkswagen, 1967, $1,500. 213-436-5965. A

Shelby, 1967 GT500, auto., air, stereo, $3,495. 213-374-5935. A

Pickup Truck, ½-ton, 1964 Ford, V-8, r/h, $1,100. 213-377-1404. A

Chevrolet, 1964 Impala 2-dr. sedan, r/h, p/s, $1,075. 213-378-4155. A

Renault, Caravelle convt., less than 1 yr. old, radio, $200 & take over pymts., $1,795. 213-428-1243. A

Chrysler, 1964 Newport, 2-dr., p/s, p/b, new tires, $1,150. 213-377-1094. A

Motor Home, 1967 17′ Winnebago, w/bath, gas refrig., p/b, sleeps 6, other extras, $5,495. 213-787-2596. A

Buick, 1963 Riviera, full power, a/c, $1,150. 213-370-9170. A

Automobiles For Sale

Rambler, 1959, o/drive, r/h, $100. 213-321-1655. A

Falcon, 1962 4-dr., r/h, auto. trans., $275. 213-331-6064. A

Studebaker, 1964 Avanti, R-3 eng., s/charged, auto. trans., $2,500. 213-867-1476. A

Household Items For Sale

Stove, Gaffers & Sattler, 4-burner w/griddle, $15. 213-327-5376. B

Dryer, gas, Sears, 2 yrs. old, $85. 213-833-0742. B

Spring Rocker, grey tweed, $15. 213-323-8089. B

Range, O'Keefe & Merritt, bltin type, coppertone, $50. 213-673-4552. B

Hide-A-Bed, Simmons, dble. size, $25. 213-324-2992. B

Dishwasher, G.E. portable, $50. 213-424-9187.

Living Room Set, 3-piece, black nylon, $50. 213-534-3021. B

Dryer, elec., 220 volts, 18 mos. old, $65. 714-962-2121. B

Refrigerator, 21 cu. ft. Frigidaire, coppertone, $250. 213-534-5350. B

Crib, w/white canopy & mattress, $30. 213-327-3795. B

Desk, walnut, 9-drwrs., $25. 213-675-3098. B

Carpet, 6x9 wool, w/pad, sunburst pattern, w/orange, brown, beige rays, $100. 213-676-3050. B

Rocking Chairs, 2 gold, $10 ea. 213-328-3306.

Range, Kenmore, gas, $35. 213-393-3622. B

Bed, dble., mattress, box spring & headboard, $50. 213-830-5284. B

Rug, 12′x15′ braided brown & tan, oval, Colonial style, $20. 213-372-4470. B

Couch, Danish modern, 8′ teak wood, green tweed, $25. 714-544-3811. B

End Table, solid maple, $20. 714-879-7625. B

Crib, $15. 213-326-0114. B

Dryer, Whirlpool, gas, $100. 213-637-5408. B

High Chair, blonde, wooden, $5. 213-644-7502.

Mangle, Kenmore, elec., knee action, 2-spds., white, $35. 213-323-5740. B

Bed, twin, maple, $20. 213-372-3827. B

Dining Room Set, Virtue Bros., w/6 chairs, $25. 213-675-1884. B

Miscellaneous For Sale

TV, 23″ b&w Zenith, walnut console, $30. 213-378-0477. C

Tuner, GW FM, plays on 4 or 8 track auto tape player, $25. 213-377-3532. C

Pups, poodle, small min. black female, AKC, $125. 213-431-4066. C

Motorcycle, 1965 Honda 160, $295. 213-325-1485. C

Tape Recorder, RCA portable, 2-spd., remote control, mike, 10 reels tape, $75. 213-783-8822. C

Tires, w/w, 4, 820 x 15, Vogue & Goodyear Double Eagle, $10. 213-675-3995. C

Slide Projector, Golde 300 W., w/Airequipt changer, case & 40x40 screen, $25. 213-670-2564. C

Mobile Home, 1954 Pan American, 8′x36′, cpts., furn., alum. closed-in patio, terms, $3,200. 213-644-1805. C

Skis, Hart Holiday's, Geze step-in bindings, $120. 213-376-5192. C

Stereo-TV combination, Philco, 23″, UHF-VHF, dark mahogany, 5½′ cabinet, $195. 213-375-0915. C

Calculator, Victor auto., $375. 213-677-4215.

Theatre Organ, Wurlitzer Horseshoe, latest mod. 4520, full manuals & pedals, 8 spkrs., $2,300. 714-847-2648. C

Wedding Dress, Cahill, ivory brocade, chapel train, long sleeve, empire styling w/veil, size 9-10, $60. 213-679-4241. C

Negligee, size 9-10, & white satin slippers, size 6½-7, white nylon, $35. 714-774-4853. C

Snare Drum, Gretsch, 8 lugs, w/stand & case, $40. 213-325-3452. C

Tires, 14″ 1 Firestone Super Sport wide ovals, 2 D70, 2 E70, $110. 213-635-3824. C

Reducing Table, Delux Stauffer, w/leg & arm stretch bar, $50. 213-675-6020. C

Archery Set, Smithwick bow, Dural arrows, leather quiver, $45. 213-376-5139. C

Utility Carrier, reinforced tubular steel full cab & bed length for Chev. pickup, $50. 213-370-7092. C

Golf Clubs, 1, 3, 4 Mt. Woods, 2-9 irons, D3, med. shafts, $110. 213-375-4340. C

Guitar, elec., $35. 213-326-0340. C

Honda, 300 Super Hawk, $300. 213-326-1178.

Roller Skates, lady's white, size 6 or 6½, $6.50. 213-673-1133. C

Tire Chains, 7.00x16 & 7.50x16, $9.50. 213-325-2512. C

Dirt Bike, 1963 Harley Sprint, $275. 805-488-2763. C

Surfboard, 8′4″ mini pintail, extra fin, $65. 213-632-2642. C

Surfboard, Gordon & Smith mod. HYIII, 9′6″ $70. 213-375-6397. C

Engine, B&S, 2½ h.p., 4-cycle, $15. 213-375-8536. C

Sailboat, 28′ wooden sloop, inboard eng., dacron sails, sleeps 4, $4,500. 213-378-4352.

Surfboard, Bing, 9′10″, $75. 213-541-1944. C

Ice Chest, large, $15. 213-371-0323. C

Pony, miniature shetland stud, 10 hands high, $75. 714-539-6203. C

Motorcycle, Norton, custom chopper, featherbed frame, $350. 213-645-7715. C

Engine, for 1962 Chevy II, 6 cyl. & trans., $100. 213-379-6126. C

Miscellaneous For Sale

Radio, Hallicrafters AM-FM, mod. FM 48, $25. 213-328-5655. C

Dirt Bike, Honda 50, $95. 213-675-3254. C

Sun Lamp, penetray portable, Mercury vapor, $8. 213-328-6662. C

Motorcycle, 1963 Yamaha, 250 cc w/elec. starter, $200. 213-831-6238. C

House, 3-bdrm., 2-car gar., 55x150′ lot enc. by b/wall, 600 sq. ft. roofed patio, 5 min. to Research Park, $28,000. 213-325-8267. C

Home, 3-bdrm., w/w cpts., dps., 2 baths, f/place, full dining rm., breakfast rm., Inglewood, tree-covered 65x150 cor. lot, $41,950. 213-678-5960. C

Motorcycle, 1965 Yamaha, 55 cc, $140. 805-495-6083. C

Tent Trailer, Heilite, sleeps 4, expandable, $395. 714-737-2311. C

Aquarium, 50-gal., Silent Giant pump, ground filter, 100-lb. sack of sand, 2 fish, $75. 213-673-4598. C

Stereo Console, small Magnavox, $75. 213-675-1953. C

Oven, child's, elec., $3. 213-379-5690. C

Lot, ¼ or ½ acre, at Lake Isabella, pvt. water supply, 2 miles from lake, $4,950. 805-482-0122. C

Play Pen, folding, $5. 213-376-4831. C

Motorcycle, Mojave, 250 cc, 20 h.p., $375. 805-482-3893. C

Desk, Cole, beige tone, marproof top, metal, 6 drwrs., matching lamp, $135. 213-373-2354.

Lot, Colorado River, paved streets, water, elec., marina, $2,495. 805-498-2529. C

TV, 12″ General Electric, b&w, $10. 213-373-3128. C

Piano, upright, $195. 213-675-2824. C

Home, tri-level, 3-bdrm., 3 baths, fam. rm., f/place, cpts., dps., 2-car att. gar., b/wall, cov. patio, 1 yr. old, College Park, $37,500. 213-431-6468. C

House, 3-bdrm., 2 baths, cpts., dps., bltins, patio, near Del Amo shopping center, $27,500. 213-325-3724. C

Home, 3-bdrm., R-2 lot, bltins, basement, upstairs, ocean-view, assume first T.D. at $115 mo. plus 2nd, $31,000. 213-379-7342. C

House, 3-bdrm., 2 baths, cpts., dps., bltins, f.a. heat, o/size gar., 5 yrs. old, $34,500. 213-322-5434. C

Ping Pong Tables, w/net, $17. 213-324-4817.

Formal, mint green, empire style, sleeveless, lace top, crepe bottom, size 7 petite, $10. 213-755-7255. C

Surfboard, Bing Lotus, 8′6″, $90. 213-674-7952. C

Vibra Harp, Deagan elec., $300. 213-591-5074.

Scuba Gear, incl. tank, reg., suit & access., $200. 213-429-2028. C

Bicycle, 23″ Schwinn Varsity, $45. 213-335-3229. C

House, 3-bdrm., 2 baths, pool, P.V. Pen., $42,500. 213-377-6029. C

Surfboard, 9′4″ Jacobs, 1½″ balsa stringer, $50. 213-894-1381. C

Light Meter, Weston Master III w/invercone incident light attachment, carrying case, $15. 213-378-3255. C

Radio, Craftsman, AM-FM w/AFC control, hi-fi amplifier & spkrs., Webcor record player, other extras, $150. 213-675-2514. C

Trunk, white, $5. 213-676-9858. C

Bow, 40-lb., 1 doz. aluminum arrows, $40. 213-372-2313. C

Pups, AKC male beagle, 4 mos. old, shots, $45. 805-498-8461. C

Utility Trailer, 4′x8′, $65. 213-925-7760. C

Auto Radio, 1968 Bowman, AM 5 pushbutton, $30. 213-327-9338. C

Cemetery Lot, 4 in Eventide sec. of Green Hills Memorial Pk., incl. perpetual endowment care, $1,560. 213-376-4677. C

Tool Box, Kennedy, $15. 213-430-2619. C

Home, 5-bdrm., 3-car gar., central a/c, undg. util., 600 sq. ft. brick & redwd. patio, fences, dps., near Northrop Ventura, $38,500. 213-889-8075. C

Shuffleboard Cues, 2 collapsible type, $7.50. 213-377-3806. C

Record Player, maple, Hoffman stereo, 3 spkrs. & AM-FM radio, 2nd unit, 2 spkrs., $150. 213-675-7381. C

Camping Trailer, 1957 Scotsman, 4 ply tires & spare wheel, sleeps 5, $495. 213-676-5219.

Snowmobile, 1967 Polaris Colt 140, 300 cc Hirth eng., trailer, $750. 714-838-7161. C

Rifle, 22 cal., bolt action w/scope, $35. 213-377-2711. C

Rifle, Sako Vixen mod., hvy. barrel .222 Rem. mag., $135. 213-860-2305. C

Stereo System, incl. Harmon-Kardon TA-120, Fisher FM-90X, Dyna 60 w. amplifier, preamp & stereo adapter, other access., $580 or sell sep. 213-326-8455. C

Drafting Machine, Bruning, $90. 213-377-1990. C

Golf Clubs, Spaulding, 4 irons, 2 woods, putter, $35. 213-672-2662. C

Stole, mink, cape-style, silver blue, $250. 213-347-4599. C

Skis, 210cm, Head 360's, $50. 213-545-2431.

Radial Arm Saw, Craftsman, 10″ & 7″ blade, steel cabinet w/drawer, other extras, $250. 213-328-4034. C

Organ, Thomas, H3 model, blonde, full size keyboard & pedal, other features, $400. 213-328-9064. C

Golf Clubs, Palmer '68 alum., 1, 2, 3, 4 woods, 2-9, & P.W. & S.W. $180. 213-377-4481. C

Apt, deluxe 4-unit, 1 block from Norair, 4 yrs. old, low dn., $64,900. 213-675-5181. C

Miscellaneous For Sale

Surfboard, 8′11″ Velzy, $30. 213-823-1788. C

Pool Table, 7′x3½′, $50. 213-671-2928. C

House, 2 story, 4-bdrm., 2 baths, fam. rm., f/place, cpts., dps., covered patio, landscaped, No. Torrance location, elec. bltins, $38,500. 213-329-0086. C

Lawnmower, 22″ rotary w/3 h.p. eng., $20. 213-823-2658. C

Pistol, 9mm Luger, 1940, w/42 toggle, extra clip, tool & holster, $135. 213-675-8617. C

Coin Collection, foreign, some U.S., many old dates, incl. stamp collection, $40. Box 2603. C

House, Lakewood, 2-bdrm., cpts., dps., dishwasher, sprinklers, $21,700. 213-925-9776. C

Record Player component, AM/FM, stereo system, complete, $175. 213-523-2495. C

Radio, for MG, $10. 213-423-1363. C

Motorcycle, 1968 Yamaha, 100 cc twin jet, $300. 213-379-1585. C

Tape Recorder, Sony mod. 100, 7″ reels & tape, $50. 213-375-5760. C

Dachshunds, small, male & female, black or brown, $35 ea. 213-663-3558. C

Wanted to Buy

Corvair, 1962-64, 2-dr. or 4-dr. in good condition. 213-645-3381. D

Slide Projector, Carousel type, good quality slide camera, Omega enlarger. 714-637-7667.

Dodge, 1967 or '68 Coronet 400 or 500, 8-cyl., reasonable price, car must be in good condition. 213-297-3504. D

Engine, 1965 Ford or later model in good condition, reasonable. 213-679-7840. D

Free (To Be Given Away)

Dogs, 2 beagle. 213-397-7266. F

Pups, 5, part German shepherd & boxer. 213-326-4459, 213-326-3083. F

Rentals Offered

Apt, 2-bdrm., 1½ baths, all elec., walk to Norair, $180 mo. 213-644-1763. G

House, 3-bdrm. & den, enc. patio, 1¾ bath, water pd., unfurn., $270 mo. 213-328-1998. G

Cabin, Green Valley, $25 w/end; $45 wk. 213-324-0649. G

Cabins, Lake Gregory & Crestline, sleep 6, $25 w/ends; $60 wk. 213-391-2040. G

Apt, 2-bdrm., unfurn., 2 baths, pvt. balcony, subterranean gar., laundry facilities, N. Inglewood, $165 mo. 213-541-1226. G

Cabin, Green Valley Lake, $35 w/end; $55 wk. 213-320-2002. G

Apt, 2-bdrm., pvt. patio, dps., cpts., stove, close to Northrop, unfurn., $150. 213-678-1649. G

Apt, Redondo Bch., 3 blocks from ocean, cpts., dps., bltins, gar. w/storage cabinets, 3-bdrm., 2 baths, $180. 213-372-8835. G

Apt, 1-bdrm., subterranean parking, pool, bltins, dps., cpts., pvt. deck, Lawndale, $180 mo. 213-644-4235, 213-670-6084. G

Rentals Wanted

House, 2-bdrm. & gar. for mature working couple, near Northrop. 213-676-8817. H

Child Care

Child Care offered, licensed, infants preferred, fenced yd., weekly. 213-327-2621. I

Child Care wanted for 7 yr. old girl during the week in the Hawthorne area, prefer your home. 213-696-9438. I

Lost

Rings, diamond engagement & wedding, generous reward, between Dec. 11 to 13, 213-322-5672. J

Rides and Riders

7 a.m. — 3:42 p.m.

Wendy Dr., Borchard Dr., or Moorpark & Thousand Oaks, Newbury Park. D. R. Licata, Mariposa ext. 4086, 805-498-1235.

Pico Blvd. & Venice Blvd., Los Angeles. Cleo Morrison, Norair ext. 2170, 213-389-7858.

Avalon & 186th St., Gardena. Genaru Chapa, Norair ext. 2568, 213-323-9447.

7:30 a.m. — 4:15 p.m.

Santa Ana-Tustin Vicinity. R. B. Speed, Norair ext. 1555, 714-544-2261.

8 a.m. — 4:45 p.m.

Ventura Beach Area to Northrop Ventura. Bill Lucking, Ventura ext. 1346, 805-648-2407.

Rides Offered

7:30 a.m. — 4:15 p.m.

Santa Ana-Tustin Vicinity. R. B. Speed, Norair ext. 1555, 714-544-2261.

Personals

My heartfelt thanks to my fellow workers & blood donors for the kindness & sympathy extended to me during the illness & passing of my mother. WM. E. BASSETTE & FAMILY, MRS. JAMES DWYER. L

Interested in contacting anyone who flew or serviced Martin B-26 aircraft in the U.K. during World War II. Info needed for history now in work. 213-788-9709. L

We wish to extend our sincere appreciation to our friends at Northrop for the many expressions of kindness during the recent loss of our husband & father, Donald E. Ross. MRS. DONALD E. ROSS & FAMILY. L

I wish to express my sincere gratitude & appreciation to all my friends at Northrop for the flowers, cards, concern & kindness shown to myself & my family due to the death of my mother. W. JONES.

My heartfelt gratitude to all my friends at Northrop for their many courtesies throughout the years & their expressions of cordial good wishes for my retirement. MARVEL KOREN.

I wish to express my sincere appreciation for the expressions of sympathy during the recent loss of my husband, Ralph G. Abbott. MRS. RALPH G. ABBOTT. L

I would appreciate copies of pictures taken of the king & queen at the luau in Kona, Hawaii, during the Northrop Hawaiian tour. 213-324-9593. L

We wish to extend our deepest & most sincere appreciation for the expressions of sympathy in the recent loss of our beloved husband, father & grandfather, P. L. "Roy" Venable. VIRGINIA VENABLE & FAMILY. L

For Sale or Trade

Engine, for model airplane, De Long 30, $15 or trade for smaller engines, prefer .049s. 213-941-1865. M

Motorcycle, 1966 Triumph Bonneville, 650 cc, $850 or consider trade-in basis on reliable automobile. 213-675-9673. M

Lincoln, 1954, $50 or trade for gun. 213-596-2920. M

Hide-A-Beds, pr. twin size, $180 & kidney shaped walnut coffee table w/stepped end tables, $60 or trade for walnut bedroom furniture & Mediterranean coffee table & end chests. 213-865-2036. M

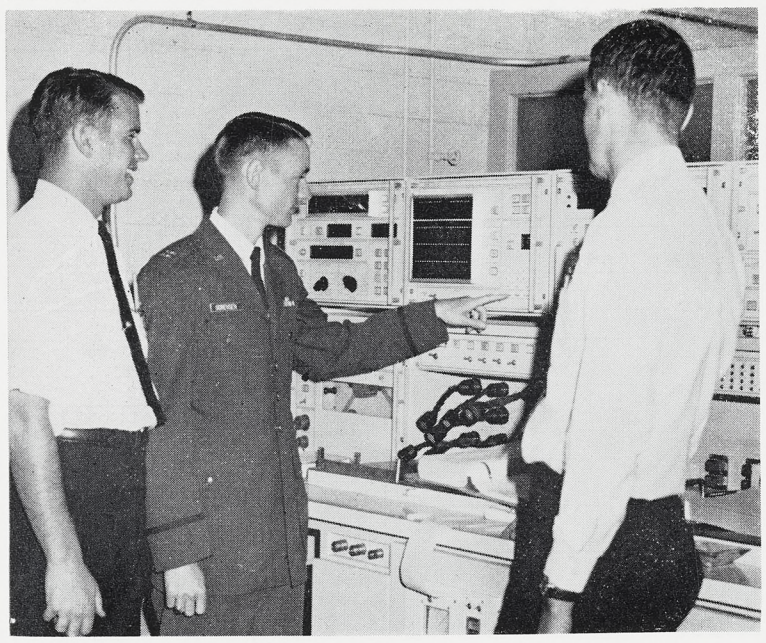
Surfboard, 9′ Vardy, fibreglass finish, $45 or trade for lighter weight surfboard. 213-374-3359. M

Dog, German shepherd, male, 1 yr. old, black & tan, AKC reg., $150 or consider trade for guns or car. 213-671-4902. M

Volkswagen, 1966 camper, completely equipped, $1,975 or trade for transportation car. 213-377-3244. M

Sunbeam, 1967 Alpine, $1,600 or trade for pickup. 714-774-4491. M

J. M. RICKETTS, formerly of the Nortronics Anaheim department, presents a check for $1,500 to the North Orange Council of the Boy Scouts of America. Receiving the contribution are Elmer Lucky (center), Scout executive for the council, and Roy Knauft, council executive board member. The contribution, second of a three-year pledge, will be used to aid development of a Boy Scouts of America service center and for long term development of a summer camp.



INERTIAL DOPPLER Navigation System for the USAF-Lockheed C-5 transport is inspected by Northrop's Jerry Colmery (left) and Dick Boulle (right) with Captain Clyde Sorensen, C-5 Flight Test Program engineer at Holloman AFB, New Mexico. USAF photo.

Excellent Results Shown in Preliminary C-5 IDNE Tests

Preliminary flight test of the C-5 Inertial Doppler Navigation Equipment (IDNE) are nearly complete. Results have been excellent, according to Roy Jackson, chief, Systems Evaluation group, Nortronics Navigation department.

The IDNE, being designed for the Lockheed C-5 Galaxy aircraft —world's largest transport, is a completely self-contained navigation system which will establish aircraft position accurately under all weather conditions without ground-based aids.

In addition to its navigation function, the system interfaces with all major avionics systems of the aircraft and also controls to a large extent the aircraft multimode radar.

The preliminary flight tests are being conducted in a C-141 aircraft as a test bed operated by Lockheed out of Marietta, Georgia. The IDNE system has completed 23 flights and 187 hours of operating time in the C-141.

"Perfo-mance has been excellent for a system in this stage of development," Mr. Jackson said. "It has been far above average."

The Nortronics Navigation department is represented at Lockheed-Georgia—where the tests are conducted—by a five-man crew headed by Lee Finch. Others are Bill Finch, Fred Zeiss, Bill Taylor and Bill Wood.

"They provide our integration contact there," Mr. Jackson said. "They keep the IDNE system on the air and working, and run systems evaluation and computer program testing. In addition, they have responsibility for the integration and evaluation of all guidance avionics interfacing with the IDNE."

An additional Nortronics crew of Dick Boulle and Jerry Colmery are at Holloman AFB, New Mexico, to support flight tests for a program that will lead to validation of C-5 systems performance for the Air Force. The program at Holloman is in the early flight testing or pre-evaluation stage.

Volunteer Program Has Its Best Year

A spontaneous program that began in 1954 with a can of beans has grown to a project that collected and disbursed $31,166.67 to aid 93 families and 17 charitable groups over the past Christmas season.

This is the Northrop Christmas Gift Program, an effort carried out entirely by employees.

Taking part were personnel from Norair, Nortronics Palos Verdes and Hawthorne, Northrop Corporate Laboratories and the Corporate office.

The current program evolved from one that began 15 years ago when employees voluntarily brought cans of food to be donated to a Northrop family in need. Since then it has grown to a point where contributions are going to many outside groups and agencies.

Money is raised by individuals and groups in many ingenious ways.

In addition, there are many gifts of materials—a washing machine for a large family, gym equipment for a school, sewing machines, furniture, typewriters, even TV sets for hospitals, shut-ins and rest homes.

Those receiving help are screened through the assistance of the East and West Los Angeles Service Centers and the Division of Child Welfare.

In addition to aid for families, organizations receiving Northrop support included the Braille Institute, Harbor General Hospital, Harvey Shoemaker School for Handicapped, Open Door Nursery, Salvation Army, Portals House, Twin Wells Indian School in Arizona, 2 wards at Pacific State Hospital and a cottage for boys at Camarillo.

Marie Tully, welfare coordinator at Norair and general chairman for the program, said: "This year's contributions were the largest in the program's 15-year history. It was made possible largely by the enthusiastic support of those who took the lead to share with the less fortunate at Christmas."

WALT PETRICH receives employee suggestion award from Frank McNabb (left). With them is Ray Beamon (center).

Prevention of Scrap Tops Suggestion Award Winners

Prevention of scrap and downtime were top winners of suggestion awards at Nortronics Anaheim last month, according to Larry King, Suggestion Award coordinator.

Inspector Walter Petrich collected $1,655 for an inspection fixture that cut the scrap rate on F-5 station 85 pylon castings. Al Arroues, Maintenance, received $351 for two suggestions reducing downtime on the automatic paint and process lines for the Boeing 747 stringers.

Other Anaheim winners were H. R. Holman, Ernest Obermayer, R. C. Lukesh, E. H. Garey and Cora Lopp.

Navigation department winners at Hawthorne were headed by Joyce Oaks who collected a $100 safety award for an eye-saving shield to prevent flying lead chippings from being a hazard.

Others receiving awards at Hawthorne included Dan Beasley, Marge Shrop, Lucille Constantino (two awards), Tony Musuraca, Lucille Riley, Mary Wiesner, Evelyn Wilson, Louise Thompson, Sophie Lockren, Frank DeLeo, Mark Brauer and Theresa Correa.

"Although there has not been much of a change in quantity of suggestions coming in," Mr. King said, "the quality has improved sharply. This means that personnel are putting more careful thought into their ideas. This should result in a higher percentage of better awards."

T-38—Division's Work Lauded By AF at 1,000th Talon Ceremonies

(Continued from page 1)

special skills needed to meet the challenges of the new high performance jet aircraft that were coming into the Air Force inventory," Mr. Nolan said.

He pointed out that despite considerable escalation of labor and material costs, Northrop has succeeded in reducing the price to the Air Force by 60 per cent.

"I know that this reflects the conscientious attention to cost that characterizes the United States Air Force," he added. "For ourselves at Northrop, I will say that this record would not have been possible without the cooperation of everyone involved in building the T-38."

The delivery ceremony, hosted by F. W. Lloyd, vice president and general manager, Northrop Norair, was attended by nearly 300 Air Force, civic and industry personnel.

Honored guests from the Air Force, in addition to Generals Maddux and Riley, included Lt. General Charles T. Myers (USAF-Retired), past commander ATC; Brig. General Harmon E. Burns, assistant deputy chief of staff, Materiel; Brig. General Ernest T. Cragg, deputy chief of staff, Operations; and Brig. General Alton D. Slay, commander, Air Force Flight Test Center, Edwards AFB.

General Cragg and Captain Robert L. Rutherford flew the milestone aircraft to Randolph AFB, San Antonio, Texas.

KAUFOLD

(Continued from page 1)

vide additional opportunity for growth.

"It will add a few problems and additional work," he said. "But we have the people, the product area and a good solid outlook for the future. One man alone in an office cannot accomplish much, but all of us working together can accomplish a lot."

21 ARE ELIGIBLE FOR SERVICE PINS

Twenty-one Nortronics employees became eligible for 10, 15 and 20 year service pins in December and January.

December veterans who completed 15 years are: from Hawthorne, Pedro Espinoza, Ellis Kennedy, Cecelia Kenny, Jeanne Saxon, and Frank Toshiro. From Anaheim, Lawrence Buckley. Those honored for 10 years are Sara Moore, Anaheim; and Arthur Nelson, Hawthorne.

In January, two from Hawthorne, William Marco and Howard Towery, completed 20 years service with Northrop. Fifteen year veterans included Martha Chapman, Palos Verdes, and—from Hawthorne—Charles Lyons, William Brown, Arthur Barton, Lawrence Lopez, Lucille Anctil, and Clarence Hibbs.

Completing 10 years were Mario Artavia, Levere Moesser, Palos Verdes, and Harold E. Hill and Anthony E. Dixon, Anaheim.

BATTER UP!

Men's Cakes Help Orphans

The ladies laughed when a gentleman's cake baking contest was suggested to raise funds for orphan children of a former Anaheim department employee.

But the amusement turned to envy when 32 entrants turned out 32 fancy decorated creations that sold for twenty-five cents a slice. Contestants were on their honor to use no help from wives.

Winning cake bakers were: J. S. Penrod, Jack Haupenthal, Lynn Cooper, Jess Hurado, Del Schaffer, Vic Gausepohl, Mike Haas, Harry Smith, L. D. Berry, Stan Hawkins, Lew Lantz, Don McKnight and Ken Richards.

Outstanding efforts by Del Schaffer, Ken Richards and Lew Lantz showed the way for the other contestants.

The male cake contest was one of several events to raise money for this annual project. The Accounting section, Financial Control, Contract Estimating, Contract Administration, and Management Systems, all at the Anaheim facility, raised in excess of $1,000 to aid five boys whose mother—their sole support—died here three years ago.

Harry K. Smith, Material Cost, the "A-1 Male Cake Bake chairman," was especially happy over the results.

"We are not only gratified by the amount of money raised," he said. "But we are tickled that not a single cake buyer got indigestion—even though several cake bakers refused to take the first bite of their cakes!"

BETTER THAN THE LADIES—At least these "master cake bakers" make that claim. Providing cakes for a recent sale to aid children of a former Northrop employee are (from left) Eddie Edwards, Lynn Cooper, Del Shaffer, Jack Haupenthal, Dick Smestad, Chuck Smith, Mike Haas, Jess Hurado, J. S. Penrod, and Jack Bracey.

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